United States Court of Appeals

for the Second Circuit

APPENDIX

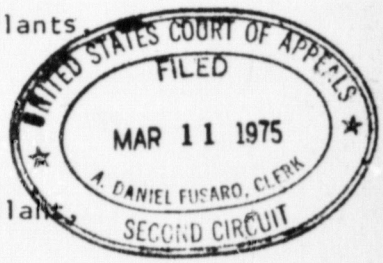
75-7048

UNITED STATES COURT OF APPEALS
FOR THE SECOND CIRCUIT
Case No. 75-7048

B
P/s

NATURAL RESOURCES DEFENSE COUNCIL, INC., ENVIRONMENTAL DEFENSE FUND, INC., THE LONG ISLAND SOUND TASKFORCE, THE FISHERS ISLAND CIVIC ASSOCIATION, INC., FISHERS ISLAND LOBSTERMEN'S ASSOCIATION, INC., CONNECTICUT CITIZENS ACTION GROUP, NORTH FORK ENVIRONMENTAL COUNCIL, INC., and THE LEAGUE OF WOMEN VOTERS OF RIVERHEAD-SOUTHOLD,

Plaintiffs-Appellants,



- and -

STATE OF NEW YORK,

Intervenor-Appellant,

- against -

HOWARD H. CALLAWAY, as Secretary of the Army; LT. GENERAL WILLIAM C. GRIBBLE, JR., as Chief of Engineers, United States Army; COLONEL JOHN H. MASON, as Division Engineer, New England Division, Corps of Engineers, United States Navy; J. WILLIAM MIDDENDORF, as Secretary of the Navy; CAPT. C.C. HEID, as Commanding Officer, Northern Division, Naval Facilities Engineering Command, Department of the Navy; RUSSELL E. TRAIN, as Administrator of the U.S. Environmental Protection Agency; and JOHN A.S. McGLENNON, as Regional Administrator, Region I, U.S. Environmental Protection Agency,

Defendants-Appellees.

APPENDIX
Volume I

DEPARTMENT OF JUSTICE
Land and Natural Resources Division
Appellate Section, Room 2338
Washington, D.C. 20530

Attorneys for Defendants-Appellees

Attorney General of the State
of New York
Two World Trade Center
New York, New York 10047

Attorneys for Intervenor-Appellant

BERLE, BUTZEL & KASS
425 Park Avenue
New York, New York 10022

PARMELEE, JOHNSON & BOLLINGER
460 Summer Street
Stamford, Connecticut 06901

Attorneys for Plaintiffs-Appellants

and other purposes, with long-term damage that may adversely

PAGINATION AS IN ORIGINAL COPY

APPENDIX

Table of Contents

Volume I	Appendix Page
List of Docket Entries.	1
Complaint for Declaratory and Injunctive Relief, dated August 28, 1974.	3
Order to Show Cause, dated September 3, 1974, with letter from Michael H. Ludwig, dated September 11, 1973, Exhibit H attached to Affidavit of Albert K. Butzel.	34
Plaintiffs' Motion for Temporary Restraining Order with supporting Affidavit, dated December 9, 1974.	38
Memorandum of Decision, dated December 13, 1974.	42
Judgment, dated December 30, 1974.	109
Plaintiffs' Notice of Appeal, filed January 3, 1975.	110
Transcript of Testimony given September 11, 12 and 20, 1974:	
Charles T. Way [22, 65-66, 118-120, 166-171, 198-200]*	111
Walter Frank Bohlen [204-250]	124
Vito L. Andreliunas [266, 286-91]	171
Richard E. Smith [297-346]	178
Edward Conley [370-400]	228
John B. Pearce [401-462]	259
Charles D. Hardy [478-79, 497-498]	321
Vito L. Andreliunas [509-520]	322

* The numbers in brackets refer to the pages in the original transcript as enumerated therein which are included in the within Appendix.

Volume 2

Appendix Page

Exhibits Introduced on September 11, 12 and 20, 1974:

Defendants' Exhibits:

A. Memorandum from Pierce to Norris, dated June 20, 1973. 334

B. Memorandum from Mason to Corps (Washington, D.C.), dated March 1, 1974 and reply by Morris, dated March 18, 1974. 337

E. Corps - EPA Correspondence:

1. Letter from Mason to EPA Regional Administrator, dated September 27, 1973. 363

2. Letter from Miller to Mason, dated October 25, 1973. [Attached letter from Mason to EPA Regional Administrator, dated October 15, 1973, is omitted]. 365

3. Letter from Mason to McGlennon, dated March 27, 1974. 366

4. Memorandum from Rosenberg to Smith, dated April 5, 1974. 368

5. Letter from McGlennon to Mason, dated April 9, 1974. 370

6. Letter from Mason to McGlennon, dated April 30, 1974. 372

7. Letter from Smith to Mason, dated May 22, 1974. 373

8. Letter from Osterndorf to McGlennon, dated June 7, 1974. 375

9. Letter from McGlennon to Mason, dated July 2, 1974. [Letter from Mason to McGlennon, dated July 26, 1974 is omitted]. 377

Volume 2, continued — Appendix Page

Exhibits Introduced on September 11, 12 and 20, 1974:

Plaintiffs' Exhibits:

4. Revised Draft Environmental Impact Statement, dated May 1973 [1-2, 6-9, 82-83, 89, 113, 118-119, 173-185].* 378

5. Addendum to Revised Draft Environmental Impact Statement, dated July 1973. 402

6A. Volume I, Final Environmental Impact Statement, dated December, 1973 [1-2, 6-11, 40, 50, 79-81, 154-157, 165-169, 171-184]. 406

6B. Volume 2, Final Environmental Impact Statement, dated December, 1973 [H-2 , Exh. J: 1-7, 12, 60-61, 82-85]. 440

7B. Letter from Osterndorf to Commanding Officer, Northern Division, dated May 2, 1973. 458

9. Memorandum from Andreliunas to Division Engineer, dated January 23, 1974. 460

12. Final Draft Report, Environmental Investigation of the Dredged Spoil Site Near New London, Connecticut, dated December 1973 [1-4, 27, 96, 98, 137-142]. 461

13. Affidavit of W. Frank Bohlen, dated August 26, 1974. 475

14. Affidavit of Howard Michael Weiss, dated August 15, 1974. 485

17. Memorandum from Andreliunas to Division Engineer, dated June 27, 1973. 497

* The numbers in brackets refer to the pages in the original exhibits as enumerated therein which are included in the within Appendix.

Volume 2, continued

		Appendix Page
20.	Proposal for the Environmental Survey of Effects of Dredging and Spoil Disposal in Thames River and New London Dumping Ground, dated May 21, 1974 [18-21].	502
23.	Affidavit of Edward R. Baylor, Charles D. Hardy, Joel S. O'Connor and C. Donald Powers, dated August 23, 1974.	507

CIVIL DOCKET

ED STATES DISTRICT COURT

Jury demand date:

CA 286

No. 106 Rev.

TITLE OF CASE	ATTORNEYS
	For plaintiff.
ATURAL RESOURCES DEFENSE COUNCIL, INC. NVIRONMENTAL DEFENSE FUND, INC. THE LONG ISLAND OUND TASKFORCE, THE FISHERS ISLAND CIVIC SSOCIATION, INC. FISHERS ISLAND LOBSTERMEN'S SSOCIATION, INC. CONNECTICUT CITIZENS ACTION GROUP, ORTH FORK ENVIRONMENTAL COUNCIL, INC. and THE EAGUE OF WOMEN VOTERS OF RIVERHEAD SOUTHOLD	Haynes N. Johnson 397-2650 460 Summer St. Stamford, Conn. 06901 Albert K. Butzel 425 Park Ave. New York, N.Y. 10022
VS	
OWARD H. CALLAWAY, as Secretary of the Army; T. GENERAL WILLIAM C. GRIBBLE, JR. as Chief of ngineers, United States Army OLONEL JOHN H. MASON, as Division Engineer, New ngland Division Corps of Engineers, U.S. Army; . WILLIAM MIDDENDORF, as Secretary of the Navy; APT. C. C. REID, as Commanding Officer, Northern ivision, Naval Facilities Engineering Command, ept. of the Navy USSELL E. TRAIN, as Administrator of the U.S. nvironmental Protection Agency; and OHN A. S. McGLENNON, AS Regional Administrator egion 1 U.S. Environmental Protection Agency,	For defendant:

STATISTICAL RECORD	COSTS		DATE 1974	NAME OR RECEIPT NO.	REC.	DI
mailed	Clerk		9-3	A. Butzel	15 00	
			9/9	Deposit		15 00
				(G.F. 100869)		
mailed	Marshal					
of Action: Action for tory & injunction relief ation of NEPA Act of 1969 to Title 42 §4321 et seq.	Docket fee					
	Witness fees					

DATE 1974	PROCEEDINGS
9-3	1. Complaint with Affidavits filed, ORDER TO SHOW CAUSE, Blumenfeld, J. 9/4 Summons issued and together with same and attested copies of ORDER handed to Marshal for service upon U.S. Atty. (Hearing 9/11/74)
9-10	2. Marshal's return showing service.
9-11	HEARING on Pltf. Order to Show Cause. One Pltf. Witness sworn & testified. Pltf. Exhibits 1 6 B filed. & W A thru 11. Def. Exhibit A filed. Atty Butzel admitted for purposes of this case on oral motion of Atty Johnson, also Atty Pete Millock of New York.
9-12	HEARING CONTINUES. Plaintiff's witness resumes stand. Pltf. Exhibits 12, 13, 14, 15, 16, 17, & 18. Pltf. two (2) witnesseses sworn and testified. Brief filed by Gov't. Def. Exhibit B filed. Two (2) defendants witnesses sworn and testified. Court adjourned at 4:15 p.m.
9-20	HEARING CONTINUES. Def. Exhibits C, & D filed. Two (2) defendants witnesses sworn and testified. Pltf's Exhibits 19, 20, 21, 22, & 23 filed. One (1) witness sworn and testified. One previously sworn witness testified. Briefs due 9-30-74. "Parties Stipulate that present hearing including 9-11 & 9-12 and today may be a Hearing on the Merits of the case as well as that of one for a preliminary injunction." Oral argument on Thursday 10-10-74. Court adjourned at 4:30 p.m.
9-30	3. Brief for Defendants.
10-1	4. Plaintiff's Memorandum in support of its motion.
10-4	5. Motion for Leave to Amend Answer filed by def.
10-10	6. Transcript of Hearings held on Sept. 11, 12, and 20, 1974. Collard, R.
10-10	CONTINUED HEARING ON MERITS, Including Preliminary Injunction and Oral Arguments. Oral argument by Plaintiffs and defendants. Rebuttal by Pltf. and defendants. Oral Motion by Pltf. for restraining order. Decision reserved on motion and injunction.
10-23	7. Transcript of Oral Argument heard on 10-10-74. Collard, R.
10-24	8. Letter to Judge Blumenfeld from Atty Butzel.
11/5	Court Reporter's Notes of Proceedings held on October 10, 1974, filed in Hartford. (Collard, R.)
11/5	Court Reporter's Notes of Proceedings held on Sept. 11, 12 and 20, 1974, filed in Hartford. (Collard, R.)
12-11	9. Motion for Temporary Restrating Order with Affidavit filed.
12-13	10. Memorandum of Decision filed, Blumenfeld, J. m 12-17. Copies mailed to counsel. (Pltss requests denied)
12-30	11. JUDGMENT, entered, Markowski, C. m 1-3-75. Copies mailed.
1-3-75	12. Notice of Appeal filed. Copies mailed to counsel., U.S.C.A. and to New Haven with copy of docket.

UNITED STATES DISTRICT COURT
DISTRICT OF CONNECTICUT

NATURAL RESOURCES DEFENSE COUNCIL, INC., ENVIRONMENTAL DEFENSE FUND, INC., THE LONG ISLAND SOUND TASKFORCE, THE FISHERS ISLAND CIVIC ASSOCIATION, INC., FISHERS ISLAND LOBSTERMEN'S ASSOCIATION, INC., CONNECTICUT CITIZENS ACTION GROUP, NORTH FORK ENVIRONMENTAL COUNCIL, INC. and THE LEAGUE OF WOMEN VOTERS OF RIVERHEAD-SOUTHHOLD

Plaintiffs,

-against-

HOWARD H. CALLAWAY, as Secretary of the Army; LT. GENERAL WILLIAM C. GRIBBLE, JR., as Chief of Engineers, United States Army; COLONEL JOHN H. MASON, as Division Engineer, New England Division, Corps of Engineers, United States Army; J. WILLIAM MIDDENDORF, as Secretary of the Navy; CAPT. C.C. HEID, as Commanding Officer, Northern Division, Naval Facilities Engineering Command, Department of the Navy; RUSSELL E. TRAIN, as Administrator of the U.S. Environmental Protection Agency; and JOHN A.S. McGLENNON, as Regional Administrator, Region I, U.S. Environmental Protection Agency,

Defendants.

H 74-268

COMPLAINT FOR DECLARATORY AND INJUNCTIVE RELIEF

Plaintiffs, by their attorneys, for their complaint herein, respectfully allege.

1. This is an action for declaratory and injunctive relief to prevent the Department of the Navy, with the

blessing of the Army Corps of Engineers, from dumping 2,800,000 cubic yards of polluted dredged spoil into Long Island Sound offshore of New London, Connecticut, and Fishers Island, New York. Relief is sought on the grounds, among others, that the Army Corps has issued a dumping permit for the project in violation of the Federal Water Pollution Control Act, as amended, and the Rivers and Harbors Act of 1899, and that both the Army and the Navy have been guilty of wholesale violations of the National Environmental Policy Act of 1969 [42 U.S.C. §4321 et seq.] (hereinafter "NEPA"). Relief is also sought against the Environmental Protection Agency for its failure to enforce the conditions that it imposed (but has now let slide) to provide at least some protection against the adverse impacts of the proposal.

Jurisdiction

2. This Court has jurisdiction under:

28 U.S.C. §1331 (Federal Question)
28 U.S.C. §1337 (Laws Regulating Commerce)
28 U.S.C. §1361 (Mandamus)
28 U.S.C. §2201-02 (Declaratory Judgment)
5 U.S.C. §§701-6 (Administrative Procedure Act)
33 U.S.C. §403 (Rivers and Harbors Act of 1899)
33 U.S.C. §1344, §1365 (Federal Water Pollution Control Act)
42 U.S.C. §4321 et seq. (NEPA)

3. The amount in controversy exceeds ten thousand dollars, exclusive of interest and costs.

4. There exists between the parties an actual contro-

versy, justiciable in nature, with respect to which the plaintiffs require a declaration of their rights by this Court.

The Parties

5. Plaintiff Natural Resources Defense Council, Inc. ("NRDC") is a non-profit membership corporation organized and operating under the laws of the State of New York, with its principal office at 15 West 44th Street, New York, New York. NRDC has a nationwide membership of about 18,000, including educators, scientists, lawyers and other citizens concerned with the protection of the environment. The principal purposes and objects of NRDC are to defend, preserve and enhance the human environment and the natural resources of the United States, including the quality of the nation's waters, principally through the monitoring of federal agencies and departments and through selective lawsuits designed to protect the public interest and ensure that federal statutes enacted to protect the environment are fully and properly implemented. During the past two years, NRDC has developed a special interest in water quality and represents not only the nationwide concern of its membership for protection of this Nation's tidelands, bays, marine and aquatic resources, but also the special interest of its numerous members who live on or near Long Island and depend upon the Sound for commercial reasons or the recreational uses of its waters and shores, including swimming and fishing.

6. Plaintiff Enviornmental Defense Fund, Inc. ("EDF") is a not-for-profit membership corporation organized and operated under the laws of the State of New York with its principal office at 162 Old Town Road, East Setauket, New York, on Long Island. EDF is a nationwide coalition of lawyers, scientists and other citizens concerned with the preservation and enhancement of the environment, including the Nation's aquatic and marine resources; and it has long been a leader in seeking action, through both administrative and judicial channels, to protect the environment and implement the laws that have been passed to that end. EDF has more than 48,000 members, many of whom live on or in close proximity to Long Island Sound, and use the Sound and its marine resources regularly for recreational, commerical and other purposes.

7. Plaintiff The Long Island Sound Taskforce is a not-for-profit membership corporation organized and operating under the laws of the State of New York, whose principal office is located at 50 West 40th Street, New York City, New York. The principal objects and purposes of the Taskforce are to act as a clearing house and resource center for environmental groups around the Sound and thereby to encourage and develop the implementation of intelligent, comprehensive and environmentally valid management practices and planning for Long Island Sound as a whole. The membership of the

Taksforce, which is newly formed, includes both individuals who reside on or near the Sound and those who use its marine and coastal resources for recreational and other purposes.

8. Plaintiff the Fishers Island Civic Association, Inc. (the "Civic Association") is a non-profit membership corporation organized and operating under the laws of the State of New York, whose principal objects and purposes include the protection of the economic, civic and social welfare of the Fishers Island community and the protection of the surrounding environment. The membership of the Civic Association consists principally of residents, property owners and businessmen on Fishers Island (which itself lies within a mile and a half of the Navy's dumping site), all of whom depend upon the continued health of the surrounding waters of Long Island Sound for recreational, residential or other purposes.

9. Plaintiff Fishers Island Lobstermen's Association, Inc., is a non-profit membership corporation organized and operating under the laws of the State of New York, whose membership consists of commercial lobstermen who ply their trade from Fishers Island and who fish for lobster in areas surrounding the Island, including areas adjacent to the dump site. The principal objects and purposes of the Lobstermen's Association include the mutual forwarding of the lobster trade on and around Fishers Island and the protection of surrounding lobster beds including beds that would be directly

affected by the proposed spoil disposal proposed.

10. Plaintiff Connecticut Citizens Action Group Inc. ("CCAG") is a non-profit membership corporation organized and operating under the laws of the State of Connecticut, with its principal office at 57 Farmington Avenue, Hartford, Connecticut. The principal objects and purposes of the Group are the protection of consumer and environmental interests and the fostering of human rights, through educational, legal and political efforts. The membership represented by CCAG on these issues includes approximately 4,500 residents of Connecticut, many of whom reside on or near Long Island Sound and use or depend on the Sound and its marine and coastal resources for both recreational and commercial purposes.

11. Plaintiff North Fork Environmental Council, Inc. (the "Council") is a not-for-profit membership corporation organized and operating under the laws of the State of New York. The Council's principal objects and purposes are to protect and preserve the environment and natural resources of the region known as the North Fork of Long Island, including, most prominently of all, Long Island Sound and its resources. Among the Council's 425 members are fishermen, businessmen, property owners and residents of northeastern Long Island and Fishers Island within a mile and a half of the dumping site, who use the Sound regularly for recreational and commercial purposes and who, together with and through

the Council have long opposed the Navy's proposed dumping project at New London.

12. Plaintiff League of Women Voters of Riverhead-Southold is an unincorporated membership association whose principal objects and purposes are to encourage participation in governmental affairs and to take non-partisan action in political issues of concern, including those dealing with environmental quality. Its members, all of whom reside in Suffolk County and the Town of Southold, regularly use the waters and coastline of Long Island for recreational purposes and, in many instances, as homeowners along the Sound, depend upon its continued health as an essential element of their well-being.

13. All of the plaintiffs, either directly or through their members, are adversely affected and aggrieved, and will suffer direct injury, by the actions of the defendants herein complained of in that the dumping project will, among other things, (A) damage or destroy finfish, shellfish and other marine resources in the New London-Fishers Island vicinity -- resources upon which a number of plaintiffs' members depend for their livelihood or for sports fishing; (B) threaten serious damage to coastal and beach areas in the aforesaid vicinity -- areas which many of plaintiffs' members use for swimming, fishing and residential uses; and (C) threaten much broader areas of Long Island Sound, which other members of plaintiffs regularly use for recreational

and other purposes, with long-term damage that may adversely affect the health of such members, as well as diminish the resources of the Sound available to their use.

14. Defendants Howard H. Callaway, Lt. General William C. Gribble, Jr., and Colonel John H. Mason are, respectively, Secretary of the Army; Chief of Engineers, Corps of Engineers of the U.S. Army; and Division Engineer, New England Division, Corps of Engineers of the U.S. Army. Under the applicable statutes and regulations of the Corps of Engineers, said defendants were and are charged with the administration and enforcement of Section 10 of the Rivers and Harbors Act of 1899, and Section 404 of the Federal Water Pollution Control Act as the same applies to the work here proposed and, in conjunction with the Navy, with the application of NEPA thereto. Defendants Callaway, Gribble and Mason, and their predecessors, successors and authorized delegates are hereinafter referred to as the "Corps of Engineers" or the "Corps."

15. Defendants J. William Middendorf and Captain C.C. Heid are, respectively, Secretary of the Navy and Commanding Officer, Northern Division, Naval Facilities Engineering Command, Department of the Navy. Under the applicable statutes and regulations, said defendants and their authorized delegates have direct responsibility for the dredging and disposal operations which are the subject of this action, and, in conjunction with the Corps, for the application of NEPA to such

work. Defendants Middendorf and Heid, together with their predecessors, successors and authorized delegates are hereinafter referred to as the "Navy."

16. Defendants Russell E. Train and John A.S. McGlennon are, respectively, administrator of the U.S. Environmental Protection Agency ("EPA") and Regional Administrator of EPA within the New England (or Region I) area. Under applicable law and the regulations of EPA, said defendants were and are charged, in conjunction with the Corps, for the administration and enforcement of Section 404 of the Federal Water Pollution Control Act as the same applies in this case, inculding the enforcement of permit conditions which they sought to impose to restrict the spoil disposal here. Defendants Train and McGlennon, together with their predecessors, successors and authorized delegates, are hereinafter referred to as "EPA."

The Proposed Project and Its Setting

17. The Navy proposes, and has now in fact begun, to deepen and widen the existing navigation channel in the Thames River, State of Connecticut, from the Naval Submarine Base at New London to the confluence of the Thames and Long Island Sound, in order, purportedly, to accommodate a larger class of submarines scheduled for fitting in 1975 or 1976.

11

The work to be carried out, which is expected to continue over two years, consists of two principal compenents:

A. The dredging of the Thames and the sucking of its bottom sediments and muds over a distance of approximately 7.5 miles and also at the Connecticut State Pier and the Navy's Underwater Systems Center; and

B. Disposal of the resulting dredged spoils, amounting to approximately 2,800,000 cubic yards, offshore of New London and Fishers Island, New York, at the so-called New London Dumping Grounds.

18. The bottom muds and sediments to be dredged are polluted, containing, among other things, oil residues, heavy metals and coliforms associated with human sewage, and exceeding in a number of respects the criteria by which EPA defines polluted spoil.

19. The dumping site lies within the eastern end of Long Island Sound, approximately one and a half miles off the Connecticut coast and less than a mile and a half from Fishers Island, New York. On information and belief, the site occupies a relatively shallow basin at such location, with depths no greater than 80 feet and, at the shallowest, only 35 feet.

20. The dumping of the polluted spoil will admittedly destroy much of the bottom life in the area where materials are actually discharged. In addition however, there may be further substantial impacts over a much broader area, as hereinafter set forth.

21. On information and belief, the areas immediately surrounding the dumping site support a rich coastal fishery, including abundant populations of lobsters, clams and other shellfish, flounder, bluefish and other marine species; and the inshore areas along the Connecticut coast opposite and northwest of the dumping site constitute important spawning and nursery grounds for both the surrounding area and for the fisheries of Long Island Sound generally.

22. The currents which flow along the bottom of Long Island Sound, while varying with the tides, admittedly result in net currents across the site to the northwest. Thus, if the polluted spoils move with the currents, they will be moved into the coastal spawning and nursery areas northwest of the dumping site and thence further into Long Island Sound.

23. On information and belief, the polluted sediments will in time move, as aforesaid, with resulting adverse impacts on the coastal spawning and nursery grounds and the

fish that depend on such areas for life, and also with potential serious effects on marine resources in more distant areas of Long Island Sound.

24. Long Island Sound itself is generally recognized as one of the great marine resources and finfish and shellfish habitats along the eastern coast of the United States. As such, the Sound provides a recreational resource of great value to tens, if not hundreds, of thousands of sports fishermen, supports a major charter boat and fishing equipment industry, and sustains an important commercial fishery as well. On information and belief, the coastal areas of the Sound contribute substantially to all of the above, and also provide important beach and pleasure boating areas and the setting for hundreds of thousands of residents living along the shores.

25. On information and belief, while there is a substantial interchange of water between Long Island Sound and the Atlantic Ocean, the Sound is, in major respects, a self-contained ecosystem, tied together by the internal circulation of its waters; and the deposit of polluted sediments in one area of the Sound, if moved by the currents and/or picked up through the food chain, will inevitably have an impact on other areas of the Sound and will

add cumulatively to the damage done by dredging and dumping projects elsewhere.

26. On information and belief, by reason of the foregoing and otherwise, the Long Island Sound Conference of 1971, which included representatives from Connecticut, New York and the Federal Government, unanimously recommended that "the practice of depositing polluted dredge material in spoil areas of the open waters of Long Island Sound should be prohibited."

27. Notwithstanding the foregoing and other factors hereinafter mentioned, the Corps and the Navy have selected, for the dumping of the polluted spoil from the Thames River, the New London Dumping Ground in the open waters of Long Island Sound.

Chronology of Events

28. On information and belief, the Navy first proposed the dredging of the Thames River here involved, and the resultant disposal of spoil, in or before 1971.

29. The said dredging and disposal project constituted, and constitutes, a "Major federal action significantly affecting the quality of the human environment",

which is subject to the provisions of NEPA. Further, because the project involves dredging and filling within navigible waters, a permit from the Corps of Engineers was required under Section 10 of the Rivers and Harbors Act of 1899 [33 U.S.C. §403] (hereinafter "Section 10") and, in addition, by reason of the dumping operations, a further permit from the Corps under Section 404 of the Federal Water Pollution Control Act [33 U.S.C. §1344] (hereinafter "Section 404").

30. In an effort to comply with NEPA, the Navy undertook to prepare an environmental impact statement for the project. The first draft was issued in March or April 1972, and proposed a dumping site 25 to 50 miles off the coast.

31. On May 8, 1973, the Navy issued a far more detailed "Revised Draft Environmental Impact Statement." In this revised draft, the Navy noted, among other things, that the spoils to be dumped were polluted -- i.e., in excess of EPA criteria[7] -- and, as a consequence, that they should be discharged at a site where they would be contained, rather than dispersed with the currents into broader areas. The Navy accordingly recommended a proven containment site off Rhode Island, where spoil dumping had been proceeding over several years.

32. In neither the initial draft nor the revised draft impact statement was the New London Dumping Ground considered as an area for spoil disposal or, indeed, even mentioned or identified. To the contrary, the revised draft stated specifically that the polluted spoils should not be dumped into Long Island Sound.

33. The revised draft was submitted to the major Federal agencies for comments which, in almost every case, responded with such comments on or before July 3, 1973.

34. In late July the Navy issued a two page addendum to the revised draft impact statement (together with a report on a small disposal project undertaken in 1972) in which, for the first time, the New London Dumping Ground was identified and -- at the same time -- selected as the disposal site. The said selection was purportedly based on a recommendation by "the Scientific Advisory Committee of an Interagency Coordination Committee on Dredging and Ocean Disposal." However, the addendum gave no reason as to why, if at all, the Scientific Advisory Committee had made its recommendations, nor was the revised draft impact statement itself updated and recirculated to reflect and invite comments on the change in site selection.

35. On or about July 26, 1973, the Corps issued a public notice announcing that the Navy had applied to it for a permit for the dredging and disposal project and that

a public hearing would be held thereon. Hearings were thereafter held on August 28 and September 11, 1973. One or more of the plaintiffs appeared at such hearings in opposition to the proposal, including the sudden change in disposal site, and also submitted comments in criticism of the revised draft impact statement, as addended.

36. Notwithstanding the public protests, the Navy, in late December 1973 or early January 1974, issued its Final Environmental Impact Statement evidencing its conclusion that the project should go forward and identifying as the spoil disposal site the New London Dumping Ground.

37. On or about March 27, 1974, the Corps gave notice to EPA that it intended to issue a permit to the Navy under Section 404 authorizing the disposal of the materials dredged from the Thames at the New London Dumping Ground.

38. On or about April 9, 1974, EPA responded by stating that it could not, at the time, reject the disposal site under the limited authorization that it read from Section 404(c), but that conditions should be imposed to minimize the risks of disposal. A copy of the EPA letter, setting forth its reasoning and the conditions it requested, is annexed hereto as Exhibit A.

39. On or about April 30, 1974, the Corps issued a 404 permit to the Navy which contained some, but not all,

of the conditions that EPA requested; and in the several months that have followed, a number of the conditions still remain unfulfilled. Notwithstanding these circumstances, EPA has not, on information and belief, sought to enforce the conditions.

40. By letter from their counsel dated July 15, 1975, plaintiffs wrote to the Corps, the Navy and EPA demanding that (A) the Navy suspend its plans to dump the polluted Thames spoil at the New London Dumping Ground and (B) the Corps withdraw its 404 authorization for such dumping. In addition, by letter dated August 12, 1974, plaintiffs also demanded that EPA enforce the conditions that it had purportedly required in conjunction with its participation in the permit issuance. Both demands were rejected, the first by letter from the Navy received on or about August 3, 1974 and the second by a letter received from EPA on August 19, 1974.

41. On or about August 19, 1974, and notwithstanding plaintiffs' notice by counsel that they were preparing to bring suit, the dredging and disposal project began at New London.

42. By reason of the foregoing, and having exhausted their administrative remedies, plaintiffs are threatened with immediate and irreparable injury, and have no adequate remedy at law.

First Claim for Relief Against the
Corps of Engineers and the Navy

43. Plaintiffs repeat each and every allegation set forth in paragraphs 1 through 42 of this complaint.

44. On information and belief, in addition to the dredging and disposal project here involved, the Corps of Engineers has developed a proposal for, and in fact contemplates, the further dredging of the Thames River upstream of the present project, with resulting polluted spoil of more than one million cubic yards.

45. On information and belief, the Navy and the Corps projects are integrally related and cannot be separated for purposes of environmental evaluation in that, among other things, (A) the Navy project will lay the way for the Corps proposal and the further adverse effects flowing from it, and (B) having used as a principal justification for the selection of the New London site the fact that it was used before as a spoil area, the deposit of the Navy fill there now will inevitably provide similar justification for the subsequent deposit of the Corps' spoil.

46. Under the foregoing circumstances, the Navy and the Corps were required by NEPA to assess the Navy's project in conjunction with the Corps' proposal. However, no such assessment was made or attempted.

47. The failure of the Navy to include in its environmental impact evaluation, and the failure of the Corps to include in its Section 404 review, an analysis of the combined Navy-Corps of Engineers Thames River dredging and disposal projects was in violation of NEPA and the lawful duties of the Corps under Section 10, Section 404 and the Corps' own regulations.

Second Claim for Relief Against the Corps of Engineers and the Navy

48. Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 47 of this complaint.

49. On information and belief, as heretofore alleged, Long Island Sound is in major respects a self-contained ecosystem, and the impacts of dredging and spoil disposal in one area of the Sound, including at New London, will affect the resources of the Sound in other areas.

50. On information and belief, in addition to the Navy's New London project and the Corps' Thames River proposal, there are, within Long Island Sound, a number of other existing and proposed dredging and disposal projects, all of which involve, either directly or indirectly through permit requirements, the Corps of Engineers, and all of which will have some adverse impacts on the Sound.

51. Notwithstanding the foregoing, the Navy, in its environmental evaluation, and the Corps in its Section 10 and Section 404 review, treated the Navy's dredging and disposal operations in isolation and without regard to the many other dredging and disposal projects now underway or contemp. ed for Long Island Sound. As a result, the impact of the Navy's operations as one of a number of cumulative insults within the Sound was never evaluated.

52. The failure of the Navy and the Corps to have evaluated the New London dredging and disposal operation in the context described above and to have considered its impacts in cumulation with other existing and proposed dredge and dumping projects in Long Island Sound was in violation of NEPA and of the Corps' lawful duties under Section 10, Section 404 and the Corps' own regulations.

Third Claim for Relief Against the Corps of Engineers and the Navy

53. Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 52 of this complaint.

54. As heretofore alleged, the Navy's revised draft environmental impact statement issued in May 1973 recommended a disposal site off Rhode Island, and was circulated to, and commented upon by, the cognizant Federal agencies on the foregoing basis.

55. When the New London site was selected in place of the Rhode Island site in July 1973, a brief addendum was issued to the revised draft environmental impact statement; but said statement was not itself revised, and no further opportunity to comment was offered to the cognizant Federal agencies. As a consequence, and as reflected in the Final Environmental Impact Statement, no comments on the changed site were received from such agencies.

56. The failure of the Navy to (A) recirculate an updated draft impact statement reflecting the change of site and (B) solicit comments from the cognizant Federal agencies on that change was in violation of NEPA.

Fourth Claim for Relief Against the Corps of Engineers and the Navy

57. Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 56 of this complaint.

58. As heretofore alleged, the last-minute selection of the New London Dumping Ground in place of the previously recommended site off Rhode Island was purportedly based on a recommendation of the "Scientific Advisory Committee of an Interagency Coordinating Committee on Dredging and Oceal Disposal."

59. On information and belief, the Scientific Advisory

Committee made no such recommendation, and the Navy's environmental impact statement was, for that reason alone, inadequate and a misrepresentation of fact.

60. On information and belief, change of the disposal site to the New London Dumping Ground was not based on environmental considerations, as represented by the Navy and the Corps, but, if on any basis at all, on political grounds.

61. The selection of the New London site on political grounds was, in and of itself, improper under NEPA and Section 404; but in any event, the selection of the site on such grounds, when environmental impacts were instead represented as the basis of decision, and the failure to disclose the political nature of the decision, were in violation of NEPA.

Fifth Claim for Relief Against the Corps of Engineers and the Navy and EPA

62. Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 61 of this complaint.

63. As heretofore alleged, in its revised draft environmental impact statement and again in its final environmental impact statement, the Navy cited the need for a disposal site where the polluted Thames River spoils would be contained rather than dispersed over a broader area.

64. On information and belief, the New London Dumping Ground is not a containment site, with the consequence that there will be wide spread dispersal; and the Corps and the Navy knew, or should have known, that this was the case.

65. In addition to the foregoing, the EPA criteria that were purportedly applied by the Corps of Engineers and the Navy in selecting the New London site [40 C.F.R. §227.64] expressly provide that:

> "When prevailing currents exist [at an ocean disposal site], the currents should be such that any suspended or dissolved matter would not be carried into known nursery or productive fishing areas or populated or protected shoreline areas."

66. As heretofore alleged, the prevailing currents at the dump site are admittedly towards the northwest, and any suspended or dissolved matter would thus be carried in that direction and, on information and belief, into areas to the northwest of the site, along the Connecticut coast, which constitute known nursery and productive fishing areas.

67. The selection of the New London Dumping Ground thus violated the EPA criteria that were purportedly applied in this case.

68. By reason of the foregoing and other failures mentioned in this complaint, the selection and approval of

the New London Dumping Ground as the site for disposal of the polluted Thames River spoil was contrary to law and aribtrary, capricious and an abuse of discretion.

Sixth Claim for Relief Against the Corps of Engineers and the Navy

69. Plaintiffs repeat and reallege each and every allegation contained in paragraphs 1 through 68 of this complaint.

70. The Final Environmental Impact Statement issued by the Navy, on the basis of which dumping permits were, on information and belief, issued by the Corps, was and is erroneous, defective, incomplete and insufficient, and failed and fails to comply with NEPA, the guidelines of the Council on Environmental Quality, and other implementing regulations, in that, among other things:

A. The Statement does not consider or discuss the Navy project in conjunction with the Corps' contemplated Thames River dredging, nor does it include any consideration or discussion of the impacts of the Navy project in cumulation with those of the Corps' and with other dredging and disposal projects in Long Island Sound.

B. The Statement does not adequately or accurately discuss or assess the characteristics of the

New London Dumping Ground, the environment of the neighboring Connecticut coast, and both the near-term and long-term risks in disposing of so much polluted fill in an area so close to nursery and spawning grounds.

C. The Statement fails to disclose the actual basis for the selection of the New London Dumping Ground, and does not even mention the basis, if any, for rejecting the Rhode Island site.

D. The Statement fails to consider or discuss, in any meaningful manner, alternative methods of dredged spoil disposal, including the use of man-made containments that could hold polluted spoil from many different projects in Long Island Sound.

E. The Statement does not adequately consider or discuss alternative ocean disposal sites.

F. Generally, the Statement was drafted with a spoil disposal site, other than New London, in mind, and, as a consequence, fails to deal directly or meaningfully in almost every respect with the New London Dumping Ground, its surrounding environment and the resulting impacts of the spoil disposal.

Seventh Claim for Relief Against the Corps of Engineers and the Navy

71. Plaintiffs repeat and reallege each and every al-

legation set forth in paragraphs 1 through 70 of this complaint.

72. By reason of the various failures and inadequacies heretofore discribed, the Navy, in proceeding with its dredging and disposal project at New London, is acting in violation of NEPA; the Corps, in issuing permits for the work, did so in violation of Section 10, Section 404 and its own regulations; and the said actions were and are arbitary, capricious and an abuse of discretion.

Eighth Claim for Relief Against EPA

73. Plaintiffs repeat and reallege each and every allegation set forth in paragraphs 1 through 72 of this complaint.

74. As reflected in Exhibit A to the complaint, while EPA did not deem itself empowered to deny use of the New London Dumping Ground, it requested that five conditions be included in any Section 404 permit issued by the Corps.

75. On information and belief, not all of the conditions requested by EPA were included in the permit, and others were included only in a diluted form.

76. Notwithstanding the foregoing and plaintiffs' demand on EPA that such conditions be enforced, EPA has

taken no action to ensure the protection that it recommended, but, in violation of its duties under Section 404, has permitted work to commence and continue free of said conditions.

WHEREFORE, plaintiffs pray for judgment:

A. Declaring that the actions of the Navy in proceeding with its dredging and disposal project at New London are contrary to applicable law;

B. Declaring null and void, and setting aside, the permit or permits issued by the Corps of Engineers for the project;

C. Enjoining the Navy and its officers, agents, servants, employees and attorneys, and all persons in active concert or participation with any of them, from proceeding with any action in furtherance of the dredging of the Thames River and the disposal of resulting spoil at the New London Dumping Ground unless and until there has been full compliance with NEPA, Section 10 and Section 404;

D. Mandating EPA to enforce compliance with the conditions it specified to be included in the Section 404 permit for the work;

E. Granting such preliminary relief as may be

necessary to prevent irreparable injury to plaintiffs pending the trial of this action and the making and entry of final judgment.

F. Awarding plaintiffs costs and reasonable attorneys' fees and such other relief as may be deemed just and proper under the circumstances.

Dated: August 28, 1974

NATURAL RESOURCES DEFENSE COUNCIL, INC., ENVIRONMENTAL DEFENSE FUND, INC., THE LONG ISLAND SOUND TASK-FORCE, THE FISHERS ISLAND CIVIC ASSOCIATION, INC., FISHERS ISLAND LOBSTERMEN'S ASSOCIATION, INC., THE CONNECTICUT CITIZENS ACTION GROUP, NORTH FORK ENVIRONMENTAL COUNCIL, INC. and THE LEAGUE OF WOMEN VOTERS OF RIVERHEAD-SOUTHOLD

By _____
Haynes A. Johnson
Attorney for Plaintiffs
460 Summer Street
Stamford, Connecticut 06901

Albert K. Butzel
425 Park Avenue
New York, New York 10022

April 9, 1974

Colonel John H. Mason
Division Engineer
New England Division, Corps of Engineers
U. S. Department of the Army
424 Trapelo Road
Waltham, Massachusetts 02154

Dear Colonel Mason:

In response to your letter of March 27, 1974, this Agency is submitting its recommendations regarding the application of the U. S. Navy (Public Notice dated July 26, 1973) to dispose of 2.8 million cubic yards of dredged spoils from the Thames River in the New London site.

Under section 404 of the Water Pollution Control Act Amendments of 1972, the Environmental Protection Agency is authorized to deny or restrict the use of any defined area for specification as a disposal site when the Administrator determines after notice and opportunity for public hearings that the discharge of such material into such area will have an unacceptable adverse impact on the municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas.

We are currently unable to demonstrate any unacceptable adverse impact on these marine resources. We therefore cannot deny site specification. However, to insure minimum adverse impact to the marine environment and the surrounding amenities, we request the following conditions be included in our site approval.

1. The disposal operation be conducted as quickly as possible.

2. All disposal occur at a point, marked by a buoy or similar marker, so that a cone-like formation results. The buoy shall be located at 72°05'00"W, 41°15'08"N.

Exhibit A

3. The Corps of Engineers find and begin to study an alternate disposal site prior to the commencement of disposal at the New London site.

4. Upon completion of all disposal of the dredged spoils, the spoils are to be covered with five inches of clean fill.

5. Should an unacceptable adverse impact be detected, the criteria for which are to be set by the Scientific Advisory Subcommittee, the permit shall be summarily suspended, or the disposal operation shall be moved to the alternate site.

We endorse the proposal for a comprehensive monitoring study to be funded by the permittee in an amount not to exceed $500,000. It is our expectation that all developments relating to this project will be coordinated with the committee of Federal and State agencies having the responsibility for the management of the Long Island Sound area.

Sincerely yours,

John A. S. McGlennon
Regional Administrator

WSR:dl

STATE OF NEW YORK)
: ss.:
COUNTY OF NEW YORK)

VERIFICATION

ANN HOWE, being duly sworn, deposes and says that she is Executive Director of the Long Island Sound Taskforce, one of the plaintiffs in this action; that she has read the foregoing complaint and knows the contents thereof; and that the same is true of her own knowledge except as to the matters therein stated to be alleged on information and belief, and as to those matters she believes it to be true.

Ann W Howe
ANN HOWE

Sworn to before me this
28th day of August, 1974.

Albert K Butzel
Notary Public
State of New York, County of New York
My Commission expires March 30, 1976

ALBERT K. BUTZEL
Notary Public, State of New York
No. 31-5507355
Qualified in New York County
Certificate filed in New York County
Commission Expires March 30, 1976

UNITED STATES DISTRICT COURT

FOR THE DISTRICT OF CONNECTICUT

NATURAL RESOURCES DEFENSE COUNCIL, INC., ENVIRONMENTAL DEFENSE FUND, INC., THE LONG ISLAND SOUND TASKFORCE, THE FISHERS ISLAND CIVIC ASSOCIATION, INC., FISHERS ISLAND LOBSTERMEN'S ASSOCIATION, INC., CONNECTICUT CITIZENS ACTION GROUP, NORTH FORK ENVIRONMENTAL COUNCIL, INC. and THE LEAGUE OF WOMEN VOTERS OF RIVERHEAD-SOUTHHOLD,	ORDER TO SHOW CAUSE
Plaintiffs,	
-against-	
HOWARD H. CALLAWAY, as Secretary of the Army; LT. GENERAL WILLIAM C. GRIBBLE, JR., as Chief of Engineers, United States Army; COLONEL JOHN H. MASON, as Division Engineer, New England Division, Corps of Engineers, United States Army; J. WILLIAM MIDDENDORF, as Secretary of the Navy; CAPT. C.C. HEID, as Commanding Officer, Northern Division, Naval Facilities Engineering Command, Department of the Navy; RUSSELL E. TRAIN, as Administrator of the U.S. Environmental Protection Agency; and JOHN A.S. McGLENNON, as Regional Administrator, Region I, U.S. Environmental Protection Agency,	
Defendants.	

Upon the summons and complaint and the annexed affidavit of Albert K. Butzel, Esq., sworn to on August 28, 1974 and the annexed affidavits of Howard Michael Weiss, Edward Baylor, et al. and W. Frank Bohlen, sworn to on August 16, 1974, August 23, 1974 and August 26, 1974, respectively, it is

ORDERED that defendants show cause before the United States District Court for the District of Connecticut on the 11th day of September, 1974 at 10:00 o'clock A.M., at the United States Courthouse, Hartford Connecticut, why an order should not be entered pursuant to Rule 65(a) of the Federal Rules of Civil Procedure:

1. Enjoining pendente lite the defendants Middendorf and Heid, as the responsible officials of the Department of the Navy, and said Department and its officers, agents, servants employees and attorneys, and all persons in active concert or participation with any of them, from further proceeding with any action in furtherance of the dredging of the Thames River and the disposal of the resulting spoil at the New London Dumping Ground; and

2. Granting such other and further relief as the Court may deem to be just and proper in the circumstances; upon the grounds that, unless so enjoined, the said defendants will perform the acts referred to above and such acts by defendants will result in irreparable injury to the public and to the plaintiffs as more particularly appears in the complaint herein and in the aforesaid affidavits submitted in support of this order to show cause.

Sufficient grounds having been shown, let service of this order and the papers upon which it was granted made upon defendants, on their respective attorneys, by the United States Marshall or agents of the plaintiffs, on or before 4 P.M. Sept 5 1974, be deemed sufficient service, provided that the inability in good faith to obtain such service by such date upon any of the defendants shall not operate to stay or postpone said show cause hearing as to defendants who are served with this order prior to such hearing.

Dated: September 3, 1974
2:30 PM

s/w Joseph Blumenfeld
U.S.D.J.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
NORTHEAST REGION
BIOLOGICAL LABORATORY, Water Resources
MILFORD, CONNECTICUT 06460

11 September 1973

Gentlemen:

My name is Michael Ludwig and I represent the National Marine Fisheries Service, Division of Water Resources.

In listening to the statements made by both the Corps of Engineers and the U. S. Navy on 28 August we believe that a slightly distorted image of the situation is appearing. It is the hope of the Division of Water Resources that these problems will be quickly resolved. We are particularly concerned about the following areas.

1) The approval that is mentioned in the opening statements is from, we believe, the Scientific Advisory Sub-committee. This Sub-committee, Chaired by Dr. John B. Pearce, is only an advisory group. Their concurrence on the proposed project does not necessarily reflect the position of the National Marine Fisheries Service. The Sub-committee assisted in assessing and informally reviewing the problem, it did not, nor is it charged with the responsibility of approving this type of project. As of this date it is our belief that

Exhibit H

[of EPA], (ii) to the State in which

they have not exceeded this authority. Thus the statement that the National Marine Fisheries Service as represented on this Sub-committee has approved this project is incorrect.

plaintiffs gave the required notice on July 15, 1974; the

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

- X

NATURAL RESOURCES DEFENSE COUNCIL, INC., et al.,

Plaintiffs,

Index No.
H 74-268

- against -

HOWARD H. CALLAWAY, as Secretary of the Army, et al.,

MOTION FOR TEMPORARY RESTRAINING ORDER

Defendants.

- X

Plaintiffs move this Court for a temporary restraining order staying defendants, their agents, servants and employees and all persons in active concert and participation with them, pending the Court's determination of plaintiffs' motion for permanent injunctive relief, from continuing to dump, directly or indirectly, dredged spoils from the Thames River at the so-called New London Dump Site in Long Island Sound off Fishers Island.

In support of this motion, plaintiffs show that:

(A) The U.S. Navy has recently decided to postpone the delivery of the first SSN 688 class submarine to the New London Submarine Base from July 1975 to early 1976. Such postponement eliminates any need for Navy dumping at the New London Dump Site in the near future while this Court's decision is pending.

(B) The U.S. Navy's dredging and dumping contractor is

now using two dredges, not one as has heretofore been employed, at the Thames River dredging site. Such increased activity can only be explained as an attempt to accomplish as much dredging and dumping as possible before this Court renders a decision on plaintiff's motion for permanent injunctive relief.

(C) As set forth in detail in plaintiffs' Complaint for Declaratory and Injunctive Relief, plaintiffs' affidavits and testimony before this Court, continued dumping at the New London Dump Site poses severe environmental hazards for Long Island Sound, those land areas surrounding the Sound and the numerous people who utilize the Sound for commercial and recreational purposes.

Peter J. Willcox
for Albert K. Butzel

ALBERT K. BUTZEL
Attorney for Plaintiffs
425 Park Avenue
New York, N.Y. 10022
(212) 838-2700

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

- X

NATURAL RESOURCES DEFENSE COUNCIL, INC., et al.,

Plaintiffs,

- against -

HOWARD H. CALLAWAY, as Secretary of the Army, et al.,

Defendants.

Index No. H 74-268

AFFIDAVIT

- X

STATE OF NEW YORK)
) ss.:
COUNTY OF NEW YORK)

PETER J. MILLOCK, being duly sworn, deposes and says:

1. I am an associate in the law firm of Berle, Butzel & Kass, one of the attorneys for the plaintiffs in the above entitled case, and make this affidavit in support of plaintiffs' motion for temporary restraining order filed herewith.

2. As noted in the motion, the Navy has recently postponed the date when the first SSN 688 submarine is scheduled for delivery to New London. I obtained this information on December 9, 1974 when I spoke on the telephone to Lt. Thomas Jurkowsky, Navy Public Information Officer in Philadelphia. Lt. Jurkowsky informed me that the first submarine of the new SSN 688 class to be delivered to the New London Submarine Base is now scheduled for arrival in "early 1976" rather than in July 1975. Lt. Jurkowsky

also stated that the decision deferring the initial arrival date to 1976 was made "recently."

3. Notwithstanding the deferral in the arrival date, as reported by the New London Day, a newspaper which regularly covers the activities at the New London Submarine Base, on November 21, 1974, two dredges are now operating at the Navy dredging site in the Thames River rather than the one dredge that has heretofore been operating there.

4. In light of the delayed arrival date of the first SSN 688 submarine, the necessity for proceeding with dredging at all pending the Court's decision, much less proceeding at an accelerated rate, has, I respectfully submit, been eliminated, and a temporary restraining order should accordingly be issued at this point.

Peter J. Millock
PETER J. MILLOCK, ESQ.

Sworn to before me this
9th day of December, 1974.

Notary Public

ALBERT K. DUTTLE
Notary Public, State of New York
Qualified in [illegible] County
Commission Expires [illegible]

UNITED STATES DISTRICT COURT

DISTRICT OF CONNECTICUT

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL	:	
v.	:	CIVIL NO. H-74-268
HOWARD H. CALLAWAY, as Secretary of the Army, ET AL	:	

MEMORANDUM OF DECISION

The plaintiffs here, groups representing environmental and general public interests, seek to halt a major governmental project because the agencies involved have allegedly made both substantive and procedural mistakes in complying with applicable environmental protection laws.

The origin of this suit lies in the Navy's current project of dredging a wider and deeper channel in the Thames River above New London to allow a new class of submarine (the SSN 688) to use the Navy's submarine facility at Groton.[1/] The dredging itself is not being challenged here; instead the

---

1/ The SSN 688, also known as the "Los Angeles" Class, is a new and larger class of nuclear high-speed attack submarine that has a draft of 32 feet. A number of these new vessels are scheduled to be homeported eventually at the submarine base in Groton. The first is to arrive from its builder in Newport News, Virginia, in July of 1975. The second, and 18 of the first 23, are to come from the Electric Boat Division of General Dynamics, whose plant is located in Groton. See Exh. 6A, 1 Final Environmental Impact Statement: Dredge River Channel ¶ 1.21 (December 1973); Testimony of Adm. Steven A. White, Transcript (Sept. 12, 1974) 350-356.

challenge is directed at the disposition of the dredged spoil at the "New London dump site," which lies approximately two nautical miles directly off the entrance to New London Harbor and about one-and-one-half nautical miles to the west of Fishers Island in Long Island Sound.[2/]

The total of the Navy's dredging is calculated as some 2.8 million cubic yards of spoil.[3/] The project is scheduled to be done in two phases. Phase I, which began August 3, involves dredging the Thames River channel from a depth of 33 feet to a depth of 36 feet between the river's mouth and the Underwater Systems Center (about halfway to the submarine base) and deepening the entrance to the Systems Center to 38 feet from a present depth of 35 feet.[4/] After a hiatus of approximately nine months from the completion of Phase I in June 1975, Phase II will commence.[5/] This portion of the project involves dredging the channel from the submarine base

---

2/ See, e.g., Exh. 6A, supra note 1, fig. 3, at 7; Exh. 1, Block Island Sound and Approaches Map (C & GS 1211) (19th ed., Dec. 15, 1973) (New London dump site marked "X").

3/ See Exh. 6A, supra note 1, ¶ 1.06. This quantity is equivalent to a block approximately 1 mile long, 300 feet wide, and 50 feet high. See Exh. 13, Affidavit of Dr. W. Frank Bohlen 6.

4/ Exh. 6A, supra note 1, ¶¶ 1.03-1.05.

5/ See Plaintiffs' Memorandum in Support of Motion for Injunctive Relief 7-8; Exh. 20, A Proposal for an Environmental Survey of Effects of Dredging and Spoil Disposal in the Thames River and New London Dumping Ground 1 (May 21, 1974).

to about a mile above the Systems Center from a present depth of 33 feet to a depth of 36 feet.[6/]

Concededly, the dredged material will be polluted, with especially high concentrations of volatile solids, industrial wastes, and Kjeldahl nitrogen.[7/] The New London dump site is apparently much cleaner of pollution than the bed of the Thames River, and the plaintiffs fear that the dredge spoil from the Thames will contaminate this relatively purer area.[8/] Additionally, the plaintiffs are concerned that dispersal of the spoil from this site will lead to pollution of estuaries and nursery grounds for marine life that exist inshore to the northwest of the dump site along the Connecticut coast.[9/] Putting these concerns into the language of a

---

6/ Exh. 6A, supra note 1, ¶ 1.04.

7/ See id. ¶¶ 2.06-2.06h and accompanying figures and tables. The Environmental Protection Agency (hereinafter "EPA") has promulgated regulations which specify what material is polluted for purposes of dumping in "oceans." See 40 C.F.R. §§ 227.61-227.64 (1973). Whether or not Long Island Sound is subject to these regulations, cf. note 52 infra, the Navy, in compiling the environmental impact statement for the project, cf. p. 4 infra, acted as if they applied and compared the composition of bottom sediment from the dredging area with interim EPA guidelines issued pursuant to them. (The source of these guidelines, which are developed at ¶ 3.11 of Exh. 6A, was not further identified for the court; however, they were not challenged and will be accepted by it.) One or more of these samples exceeded each EPA guideline except that for acceptable concentrations of mercury. See Exh. 6A, supra note 1, table 2, at 40. See also Testimony of Lt. Chas. T. Way, Transcript (Sept. 11, 1974) 32-33.

8/ Cf. Exh. 13, supra note 3, at 6-8; Exh. 14, Affidavit of Dr. Howard M. Weiss 4.

9/ See, e.g., Exh. 13, supra note 3, at 7-8; Exh. 14, supra note 8, at 10; Plaintiffs' Memorandum, supra note 5, at 10-11.

complaint, the plaintiffs argue that the decision to dispose of the dredge spoil at the New London dump site was "arbitrary and capricious"--a clear abuse of discretion that this court should nullify.[10] This claim will be referred to below as the "substantive" objection to the Navy's project.

The plaintiffs also complain that the agencies involved inadequately complied with procedural requirements for making the decision to use the New London dump site. The parties do not dispute that the spoil disposal project was subject to the requirements of the National Environmental Protection Act, 42 U.S.C. §§ 4321-4347 (1970) (hereinafter "NEPA"). Principal among these requirements is one demanding that an environmental impact statement (hereinafter "EIS") be filed before the project is undertaken.[11] A substantial body of case law has grown up around the issue of exactly what such a statement must contain,[12] and the thrust of many of the plaintiffs' claims is that the Navy's EIS for this project

---

10/ See Plaintiffs' Memorandum, supra note 5, at 54-58.

11/ See 42 U.S.C. § 4332(2) (1970). In an early and perhaps the leading case in the field, Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109 (D.C. Cir. 1971), Judge Skelly Wright emphasized strongly the importance of the EIS in the statutory scheme of NEPA. 449 F.2d at 1112-1115.

12/ The court notes that one service that specializes in reporting environmental law cases, BNA's Environmental Reporter--Cases (hereinafter "ERC") has grown to six volumes and well over 10,000 pages since 1970.

is deficient in omitting required data.[13/] A broader but related claim is that the Navy's EIS for this project was not the objective inquiry required by NEPA and regulations thereunder[14/] precedent to a decision but was instead a self-serving justification for a previously made decision to use the New London dump site.[15/] Two other related claims are that (1) the Army Corps of Engineers (hereinafter "the Corps"), not the Navy, should have prepared the EIS, and (2) even if the Navy was properly in charge of preparing the statement, it violated the requirements of NEPA by contracting the preparation of the EIS to a consultant instead of doing all the work on the statement by itself.[16/]

The parties do not dispute that the Navy was required by the Water Pollution Control Act to get a permit from the Corps in order to dump the dredge spoil.[17/] The Corps granted

---

13/ See Plaintiffs' Memorandum, supra note 5, at 24-50.

14/ See, e.g., Council on Environmental Quality (hereinafter "CEQ"), Guidelines for the Preparation of Environmental Impact Statements §§ 1500.2, 1500.7, 38 Fed. Reg. 20550, 20552 (1973); Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1114-1115, 1127-1128 (D.C. Cir. 1971); Environmental Defense Fund, Inc. v. Armstrong, 352 F. Supp. 50, 55 (N.D. Cal. 1972), aff'd, 487 F.2d 814 (9th Cir. 1973); Daly v. Volpe, 350 F. Supp. 252, 259 (W.D. Wash. 1972).

15/ See Plaintiffs' Memorandum, supra note 5, at 19-24.

16/ See id. at 51-54.

17/ 33 U.S.C. § 1311(a) (Supp. II, 1972) provides that "[e]xcept as in compliance with . . . [the Federal Water Pollution

such a permit on April 29, 1974, conditioning it upon institution of a program to monitor the environmental effects of

17/ cont'd

Control Act] the discharge of any pollutant by any person shall be unlawful." "The term 'pollutant' means dredged spoil . . . ." 33 U.S.C. § 1362(6) (Supp. II, 1972). For disposal of dredged spoil § 1344 of the Act provides:

> "(a) The Secretary of the Army, acting through the Chief of Engineers, may issue permits, after notice and opportunity for public hearings for the discharge of dredged or fill material into the navigable waters at specified disposal sites.
>
> "(b) Subject to subsection (c) of this section, each such disposal site shall be specified for each such permit by the Secretary of the Army (1) through the application of guidelines developed by the [EPA] Administrator, in conjunction with the Secretary of the Army, which guidelines shall be based upon criteria comparable to the criteria applicable to the territorial seas, the contiguous zone, and the ocean under section 403(c), and (2) in any case where such guidelines under clause (1) alone would prohibit the specification of a site, through the application additionally of the economic impact of the site on navigation and anchorage.
>
> "(c) The [EPA] Administrator is authorized to prohibit the specification (including the withdrawal of specification) of any defined area as a disposal site, and he is authorized to deny or restrict the use of any defined area for specification (including the withdrawal of specification) as a disposal site, whenever he determines, after notice and opportunity for public hearings, that the discharge of such materials into such area will have an unacceptable adverse effect on municipal water supplies, shellfish beds and fishery areas (including spawning and breeding areas), wildlife, or recreational areas. Before making such determination, the [EPA] Administrator shall consult with the Secretary of the Army. The [EPA] Administrator shall set forth in writing and make public his findings and his reasons for making any determination under this subsection."

the dumping.[18] The plaintiffs argue that this action by the Corps was improper (1) because the Navy's underlying EIS of December 1973 was deficient;[19] (2) because the Corps itself failed to comply with applicable guidelines developed by the Environmental Protection Agency;[20] and (3) because the monitoring program gives no protection against harmful dispersion of the spoil--it simply records it.[21]

On the basis of all these alleged violations of law,[22] the plaintiffs ask this court to grant permanent injunctive

---

18/ The permit is Exh. 11 in these proceedings. For a discussion of the events leading up to this action see pp. 19-23 infra.

19/ See Plaintiffs' Memorandum, supra note 5, at 58-59.

20/ See id. at 59-61. The application of such guidelines is required by 33 U.S.C. § 1344(b) (Supp. II, 1972). According to the plaintiffs, the appropriate criteria are those for "ocean dumping," promulgated at 40 C.F.R. §§ 227.61-227.64 (1973). But cf. note 52 infra.

21/ See Plaintiffs' Memorandum, supra note 5, at 61-62. This objection is perhaps best characterized as a "substantive" one and will be treated as an element of the claim that the decision to use the New London dump site was arbitrary and capricious. In addition the plaintiffs claim that the required monitoring program is not being carried out. See id. at 62.

22/ A number of claims have been dropped by the plaintiffs since institution of this action. First, the plaintiffs originally complained that, because of the substantive and procedural shortcomings alleged above, the permit for the dredging in the Thames River, issued by the Corps pursuant to 33 U.S.C. § 403 (1970), was invalid. At this stage the plaintiffs no longer challenge the validity of the dredging. See Transcript (Sept. 11, 1974) 5-6. Second, the third count

relief against the continued dumping of dredge spoil from the Thames River project at the New London dump site.[23] After

22/ cont'd

of the plaintiffs' complaint alleges that the Navy failed to recirculate and solicit comments on an addendum to their draft EIS, thereby violating NEPA. This claim is not pressed in the post-trial brief, and indeed the point seems to be conceded. See Plaintiffs' Memorandum, supra note 5, at 26-27. Third, the plaintiffs originally complained that the EPA failed of its responsibilities by neglecting to enforce conditions it imposed upon the Corps' issuance of the dumping permit to the Navy. However, the plaintiffs now concede that this "issue has dropped out of consideration, and will not be developed at any length in this brief." Id. at 17 n.*. Accordingly, this court will not treat the issue as a live one.

23/ More particularly, the requests for relief still relevant to the case pray for judgment:

> "A. Declaring that the actions of the Navy in proceeding with its . . . disposal project at New London are contrary to applicable law;
>
> "B. Declaring null and void, and setting aside, the permit or permits issued by the Corps of Engineers for the project;
>
> "C. Enjoining the Navy and its officers, agents, servants, employees and attorneys, and all persons in active concert or participation with any of them, from proceeding with any action in furtherance of the . . . disposal of resulting spoil at the New London Dumping Ground unless and until there has been full compliance with NEPA . . . and Section 404;
>
> " . . . .
>
> "F. Awarding plaintiffs costs and reasonable attorneys' fees and such other relief as may be deemed just and proper under the circumstances."

The plaintiffs originally requested both preliminary and permanent relief. Through agreement of the parties the three-day hearing (held September 11, 12, and 20) on the application

disposing of two preliminary issues, I will turn to the merits of the remaining substantive and procedural objections that the plaintiffs have raised.

I. Jurisdiction

The jurisdiction of this court to hear the challenges based on alleged violations of NEPA is indisputedly proper under 28 U.S.C. §§ 1331, 1337 (1970). However, the defendants maintain that the court does not have jurisdiction of the objections based upon alleged violations of the Water Pollution Control Act.[24/] This Act contains a section giving jurisdiction over citizen suits, 33 U.S.C. § 1365 (Supp. II, 1972). One of the requirements of this section is that:

> "(b) No action may be commenced--
> (1) . . .
> (A) prior to sixty days after the plaintiff has given notice of the alleged

23/ cont'd

for a preliminary injunction was consolidated with the hearing on the merits required for a permanent injunction. See Fed.R.Civ.P. 65(a)(2).

At the time of oral argument (October 10) the dumping had been halted and the court was informed that it was not scheduled to resume until October 28. The plaintiffs requested that if the opinion of this court as to permanent relief had not been issued by October 28, the court grant temporary relief pending issuance of the opinion. See Transcript (Oct. 10, 1974) 106.

24/ The defendants would also challenge the justiciability of an attack on the dredging permit. See Brief for Defendants 7; Connecticut Action Now, Inc. v. Roberts Plating Co., 457 F.2d 81 (2d Cir. 1972). Because the plaintiffs disclaim any such attack, I do not reach this issue.

> violation (i) to the Administrator [of EPA], (ii) to the State in which the alleged violation occurs, and (iii) to any alleged violator of the standard, limitation, or order . . . .
>
> . . . .
>
> Notice under this subsection shall be given in such manner as the [EPA] Administrator shall prescribe by regulation."

The regulations prescribed are set out in the margin.[25/] The

---

25/ 40 C.F.R. §§ 135.2-135.3 (1973):

> "§ 135.2 Service of notice.
>
> "(a) Notice of intent to file suit pursuant to section 505(a)(1) of the Act shall be served upon an alleged violator of an effluent standard or limitation under the Act, or an order issued by the Administrator or a State with respect to such a standard or limitation, in the following manner:
>
> " . . . .
>
> "(3) If the alleged violator is a Federal agency, service of notice shall be accomplished by certified mail addressed to, or by personal service upon, the head of such agency. A copy of such notice shall be mailed to the Administrator of the Environmental Protection Agency, the Regional Administrator of the Environmental Protection Agency for the region in which such violation is alleged to have occurred, the Attorney General of the United States, and the Chief administrative officer of the water pollution control agency for the State in which the violation is alleged to have occurred.
>
> " . . . .
>
> "(c) Notice given in accordance with the provisions of this part shall be deemed to have been served on the postmark date if mailed, or on the date of receipt if served personally.

[Footnote continued on following page.]

plaintiffs gave the required notice on July 15, 1974;[26/] the complaint was filed on September 3, 1974, less than 60 days thereafter. Therefore, the plaintiffs' claim to jurisdiction under 33 U.S.C. § 1365 (Supp. II, 1972) must fail.[27/] Cf. Montgomery Environmental Coalition v. Fri, 366 F. Supp. 261,

25/ cont'd

"§ 135.3 Contents of notice.

"(a) Violation of standard, limitation or order.--Notice regarding an alleged violation of an effluent standard or limitation or of an order with respect thereto, shall include sufficient information to permit the recipient to identify the specific standard, limitation, or order alleged to have been violated, the activity alleged to constitute a violation, the person or persons responsible for the alleged violation, the location of the alleged violation, the date or dates of such violation, and the full name, address, and telephone number of the person giving notice.

" . . . .

"(c) Identification of counsel.--The notice shall state the name, address, and telephone number of the legal counsel, if any, representing the person giving the notice."

26/ See Exh. C, Stipulation, and second attachment thereto.

27/ Moreover, according to the inside address the plaintiffs' letter of notice was not sent to the Administrator of the Environmental Protection Agency or the Attorney General of the United States, as required by 40 C.F.R. § 135.2(a)(3) (1973). (This regulation also requires a copy to be sent to the chief administrative officer of the water pollution control agency in the region in which the violation is alleged to have occurred. The court has not been informed whether the New London dump site is within the jurisdiction of any water pollution control agency, however, so I do not rely upon this possible deficiency.)

265-266 (D. D.C. 1973); Brown v. Ruckelshaus, 364 F. Supp. 258, 265 n.10 (C.D. Cal. 1973).[28/]

II. Standing

The standing of the plaintiffs to assert that the Corps and the Navy have violated NEPA is unchallenged here. The plaintiffs are all groups which assertedly contain numerous members who use Long Island Sound in one way or another. In showing potential actual injury from pollution of the Sound, they have shown enough to have standing to sue

---

28/ These alleged violations of the Water Pollution Control Act may not be complained of under some other jurisdictional head (e.g., 28 U.S.C. § 1331 (1970)), even though section 1365 of Title 33 contains a savings clause:

> "(e) Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any effluent standard or limitation or to seek any other relief (including relief against the Administrator or a State agency)."

The Senate Committee on Public Works explained:

> "It should be noted . . . that the section would specifically preserve any rights or remedies under any other law. Thus, if damages could be shown, other remedies would remain available. Compliance with requirements under this Act would not be a defense to a common law action for pollution damages." S. Rep. No. 92-414, 92d Cong., 2d Sess. (1971), in 1972-2 U.S. Code Cong. & Admin. News 3746-3747.

Thus, subsection (e) apparently was not intended to allow violations of the Act to be prosecuted, except as they create some rights independent of the Act, other than under the jurisdictional grant of the Act, 33 U.S.C. § 1365 (Supp. II, 1972).

under Sierra Club v. Morton, 405 U.S. 727 (1972). See Montgomery Environmental Coalition v. Fri, 366 F. Supp. 261, 264 (D. D.C. 1973).

III. Authorship of the EIS

One of the plaintiffs' objections is that the Corps and not the Navy should have prepared the EIS. NEPA provides that "the responsible official" shall prepare an impact statement,[29/] and the CEQ Guidelines (not issued in final form until August 1973)[30/] provide guidance on which federal agency should be the "lead" agency and write the EIS when there is overlapping jurisdiction.[31/] The agency selection should

---

29/ See 42 U.S.C. § 4332(2)(C) (1970).

30/ See note 14 supra.

31/ In many federal projects different agencies may interact with one another and have partial responsibility for a project. This raises the interesting possibility that as to each agency the project may not be "major." Because NEPA applies to "major Federal actions," however, 42 U.S.C. § 4332(2)(C) (1970) (emphasis added), it is clear that all the federal parts of a project should be summed in order to determine whether the project is "major" and thus whether NEPA should apply. Concomitantly, if NEPA does apply to a project as a whole it must apply to each of its parts. Here, even though the Corps' responsibility for site selection may or may not have constituted major federal action by itself, the dumping project as a whole was clearly major federal action. Therefore NEPA applies to the project, and all the obligations it imposes fall squarely upon the agencies involved. This does not mean that each must separately comply with each of NEPA's requirements, which would result in multiple impact statements, etc. It does mean that there must be a valid EIS somewhere in the process, and deficiencies in the EIS will affect all parts of the project--even those being carried on by other agencies. In other words, if the EIS prepared by the Navy is deficient, the deficiency may invalidate the action of the Corps in granting a dumping permit.

turn upon

> "the time sequence in which the agencies become involved, the magnitude of their respective involvement, and their relative expertise in regard to the project's environmental effects." 32/

The plaintiffs contend somewhat conclusorily, that application of these guidelines to the instant case should have resulted in the Corps' being chosen to write the EIS. The court does not view the guidelines as so pellucid, however. As to the time sequence (and assuming that the guidelines favor the agency who becomes involved at the earlier date), the Navy has the stronger case for being the lead agency since it initiated the dumping project. As to the magnitude of the agencies' respective involvement, it was the Corps that had the statutory authority to select a site. But this was not merely a site selection project; it was a dumping project, and the Navy was to carry out all the actual dumping. As to relative environmental expertise, no data has been presented as to which agency was more experienced prior to January 1972 (when the Navy prepared the first draft of the impact statement).33/

32/ CEQ Guidelines, supra note 14, § 1500.7(b).

33/ The Navy's initial draft statement is Exhibit 3 in these proceedings. The plaintiffs point out that the Corps had prepared a draft statement for their own Thames dredging project by August 1972. The court finds this irrelevant as to the issue of which agency was more knowledgeable when the decision about who was to write the EIS on the Navy project was made sometime prior to January 1972.

It is true that where defects of procedure[34] are urged in environmental cases, the standard a reviewing court will apply is very strict:

> "if the decision was reached procedurally without individualized consideration and balancing of environmental factors--conducted fully and in good faith--it is the responsibility of the courts to reverse." 35/

However even where the challenge is to the procedures followed the court must be convinced that error has been made. In the present instance the court is unable to conclude, on an examination of the record, that the Navy should not have been designated the lead agency for the dumping project here involved. Without a stronger showing of error, the court is unwilling to upset the agencies' decision that the Navy should draft the EIS. Although admonished by Calvert Cliffs' not to accord too much weight to the delay that following NEPA procedures properly might entail,[36] the court finds it noteworthy that if an error in authorship were found here, the

---

34/ That is, those that do not challenge the propriety of the ultimate agency decision but instead attack the EIS or the procedures followed by the agency in reaching its substantive decision.

35/ Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1115 (D.C. Cir. 1971); see I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 240-242 (D. Conn. 1974). The basis for this strictness is found in 42 U.S.C. § 4332(2)(C) (1970).

36/ See 449 F.2d at 1118.

government would have to retreat all the way back to the EIS-drafting stage. If the statement were otherwise proper, invalidating the entire EIS process because of a mistake of authorship would be an extraordinarily harsh measure. There is no need to make an abstract decision about the boundary of responsibility between these agencies on which so much would turn. The purposes and policies behind NEPA were fulfilled in this case.

The plaintiffs next argue that if the Navy was properly designated as the "responsible" agency to be charged with preparation of the EIS, it improperly abdicated its duty by contracting the job out to an independent consultant, the Ecosystems Division of Jason M. Cortell & Associates in Cambridge, Massachusetts (hereinafter "Ecosystems").

The Navy itself prepared the initial draft EIS in January 1972. This eight-page document was given to Ecosystems, along with comments received on it, appropriate background information, and instructions.[37/] Ecosystems then prepared the much more extensive revised draft EIS and final EIS. Lt. Charles T. Way, the Naval officer principally responsible for the EIS,[38/] reviewed and edited these drafts. Way testified that he confined himself to a coordinator's role

---

37/ See Testimony of Lt. Chas. T. Way, Transcript (Sept. 12, 1974) 196-197.

38/ See Testimony, supra note 7, at 22-23.

and did not question the content or accuracy of the studies the consultants used or the conclusions they drew therefrom.[39]

The plaintiffs contend that the Navy's actions here represent an impermissible delegation of its duty as the "responsible official" to prepare the EIS. See 42 U.S.C. § 4332(2)(C) (1970); CEQ Guidelines, supra note 14, § 1500.7(c). The Second Circuit has been in the forefront of those courts requiring the responsible agency itself to prepare the EIS: a number of cases in this Circuit have held impact statements to be invalid because prepared by someone other than the agency. See Greene County Planning Bd. v. Federal Power Comm'n, 455 F.2d 412, 420-422 (2d Cir.), cert. denied, 409 U.S. 849 (1972); I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 243-247 (D. Conn. 1974); Conservation Soc'y v. Secretary of Transp., 362 F. Supp. 627, 629-632 (D. Vt. 1973); Committee to Stop Route 7 v. Volpe, 346 F. Supp. 731, 741 (D. Conn. 1972). In all of these cases, the concern has been that the EIS preparer, a state agency, had an interest in seeing the project accepted as proposed and would therefore write a biased EIS. Bias in the impact statement, of course, renders impossible the fair and careful evaluation of a project's environmental effects demanded by NEPA. Cf. Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1115 (D.C. Cir. 1971).

39/ See Testimony, supra note 37, at 198-200.

This case is easily distinguishable. The preparer here was a consultant hired by and fully responsible to the Navy; Ecosystems had no self-interest that would be served by biasing the EIS.[40/] The major factor motivating the decisions in the cases cited above is simply not present here. Indeed, there are compelling reasons why federal agencies should be allowed to use outside consultants, making them in effect adjuncts of the agency's own staff for purposes of EIS preparation. A number of federal agencies may not undertake enough projects to make it cost-efficient to hire full-time people to work on impact statements. To prohibit agencies from hiring part-time consultants to do this work might compel them to utilize employees without any special expertise in this area to compile impact statements; an expectable result would be poorly written statements. Alternatively, prohibiting consultants might force agencies to hire full-time people for whom there was only part-time work. With the economy

---

40/ This fact distinguishes the present case from Life of the Land v. Brinegar, 485 F.2d 460 (9th Cir. 1973), cert. denied, 416 U.S. 961 (1974), in which a consultant for a state agency prepared the EIS. The consultant's fee was computed upon a percentage of the cost of the entire project, so there was some self-interest in having the project approved. The Ninth Circuit approved the consultant's authorship of the EIS notwithstanding these considerations. 485 F.2d at 467-468. This court has previously indicated that approval of this sort of delegation is inconsistent with Greene County. See I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 246 n.72 (D. Conn. 1974); cf. Sierra Club v. Lynn, 502 F.2d 43, 59 (5th Cir. 1974). And Justice Douglas vehemently disapproved of this delegation in dissenting from the Court's vacating of the injunction and stay he had ordered in the case. 414 U.S. 1052, 1053-1057 (1973).

already in a tailspin due to "stagflation," this court will not compel such a wasteful result. I hold that the use of a consulting firm responsible solely to the federal agency charged with preparation of the EIS does not violate the requirements of NEPA.

IV. Integrity of the EIS

Before considering the next claim it will be helpful to briefly set out the chronology of events leading up to the issuance of a permit to dump at New London.

A. Background

The Navy's short original draft impact statement, prepared in January 1972, did not name a site for dumping. It provided simply that the dredge spoil would be disposed of "at a distance of approximately 23 to 50 miles from the mouth of the Thames River."[41/] A number of the agencies to which the draft was circulated commented upon its deficiencies,[42/] and the Navy hired Ecosystems to prepare a revised draft.

The revised draft, issued in May 1973, went into the issue of site selection much more thoroughly. The draft

---

41/ Exh. 3, supra note 33, at 1 (because there is a covering letter, index, and cover sheet to the EIS, all unnumbered, this is actually the fifth sheet of paper in Exh. 3).

42/ See Exh. 4, Revised Draft Environmental Impact Statement: Dredge River Channel ¶¶ 8.01-8.02, app. A (May 1973).

concluded that containment sites (those in which dumped spoil would remain) were preferable to dispersal sites[43/] and that Long Island Sound was a poor disposal area. This latter conclusion was based partly on the Navy's own studies[44/] and partly on comments received from the EPA.[45/] The revised draft EIS recommended that the spoil be dumped at a previously used dump site, known as the Brenton Reef site, that lies off Newport in Rhode Island Sound.[46/]

Exactly what happened thereafter is the subject of much dispute in this case. The following facts are fairly clear, however. On May 2, 1973, (before the revised draft EIS had been circulated) the Corps of Engineers refused as "premature" a request from the Navy for a permit to dump at Brenton Reef.[47/] The Corps at that time questioned the economic desirability of dumping so far from the site of the dredging and indicated that it was awaiting the results of studies of the New London dump site. These results were

---

43/ See id. ¶ 1.08.

44/ Cf. id. ¶¶ 1.09, 2.11c.

45/ See id. ¶ 1.09.

46/ See id. ¶ 1.08 & fig. 3.

47/ See Exh. 7B, Letter from Col. Chas. J. Osterndorf (Corps) to Commanding Officer (Northern Div.), Naval Facilities Engineering Command, May 2, 1974.

issued on May 25, 1973, in a Naval Oceanographic Office study,[48/] and the Corps began, in its own thinking, to lean heavily toward use of the New London dump site.[49/] The Corps' scientific advisory group, the Scientific Subcommittee on Ocean Dredging, met on June 19, 1973, and actively considered using the New London dump site. This group has representatives from EPA, the National Oceanic and Atmospheric Administration, the U. S. Fish and Wildlife Service, and the Corps.[50/] By the time that the Subcommittee next met, on July 13, 1973, it had moved to recognizing "the New London spoiling site as the best site to use at the present time; it saw no need to transport spoils to another site further to the east."[51/] The EPA commented on the revised draft EIS on July 3, 1973, noting that a recent legislative change had made consideration of dump sites within Long Island Sound possible.[52/]

48/ This study is a part of Exh. 5 in this proceeding.

49/ See Exh. 17, Draft Memorandum from Vyto L. Andreliunas (Corps) to Division Engineer, June 27, 1973.

50/ See Exh. 6A, supra note 1, ¶ 1.11.

51/ See Exh. 10, Record of Meeting of Scientific Subcommittee on Ocean Dredging and Spoiling 1-2 (July 20, 1973).

52/ See Exh. 6A, supra note 1, at A2. The EPA conclusion that the law was changed to allow more flexibility to select sites in Long Island Sound is based on 33 U.S.C. § 1413(d) (Supp. II, 1972), which provides that the Secretary of the Army may authorize otherwise nonconforming dredge spoil dumping in the "ocean" if he concludes that no other economically feasible

All this activity culminated in the Navy's issuance of an "Addendum" to the revised draft EIS on August 9, 1973, in which the dump site was changed from Brenton Reef to New London.[53/] Public hearings were held on the revised EIS plus Addendum, and a final EIS, based in part upon the comments of the Corps, was issued in December 1973.[54/] The fact that the Corps occupied a dual role as one of the commenting agencies to which the EIS was circulated and as the final decisionmaker has tended to cause some confusion in this case. But the Corps' function as a comment agency in no way diminished its sole responsibility to select a site, and thus the Navy reapplied to the Corps for a permit to dump at New London. After the local headquarters of the Corps got clearance from its national headquarters in Washington,[55/] and after the Corps had given the EPA an opportunity, in conformity with the Water Pollution Control Act, 33 U.S.C. § 1344(c)

52/ cont'd

method or site for disposal is available. See Exh. 6A, supra note 1, ¶ 1.09. The defendants here contend that restrictions on "ocean" dumping do not apply to dumping in Long Island Sound, cf. 33 U.S.C. § 1402(b) (Supp. II, 1972); the court does not need to determine the correctness of this contention.

53/ The Addendum is part of Exh. 5 in this proceeding.

54/ This final statement is in two volumes, which are Exhs. 6A & 6B in this proceeding.

55/ See Exh. B, Memoranda from Col. John H. Mason (Corps New England Division Engineer) to HQDA (DAEN-CWO-N), March 1, 1974, and from Maj. Gen. J. W. Morris (DAEN-CWO-N) to Division Engineer, New England, March 18, 1974.

(Supp. II, 1972), to "restrict or deny" dumping at New London,[56] a permit was issued to the Navy on April 29, 1974, to dump the dredge spoil there.[57]

B. Issues and Analysis

An EIS for major federal projects is required to implement the congressional command that all federal agencies shall help "insure that presently unquantified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations . . . ." 42 U.S.C. § 4332(2)(B) (1970). The plaintiffs argue that since the EIS is supposed to be an input to decisions, it is naturally important that the decisions not be made first, with the EIS serving simply as a post hoc justification for them. The CEQ guidelines for the preparation of impact statements concur:

> "In particular, agencies should keep in mind that such statements are to serve as a means of assessing the environmental impact of proposed agency actions, rather than as a justification for decisions already made." [58]

56/ See Exh. E, Letter from Col. John H. Mason (Corps) to John McGlennon (EPA), March 27, 1974.

57/ See Exh. 11, supra note 18.

58/ CEQ Guidelines, supra note 14, § 1500.7(a); see Sierra Club v. Lynn, 502 F.2d 43, 59-60 (5th Cir. 1974); Environmental Defense Fund, Inc. v. Armstrong, 352 F. Supp. 50, 55 (N.D. Cal. 1972), aff'd, 487 F.2d 814 (9th Cir. 1973); Daly v. Volpe, 350 F. Supp. 252, 259 (W.D. Wash. 1972).

The plaintiffs argue that this basic requirement for an EIS was not followed here--that the Corps made its site selection decision by June 27, 1973,[59] and that it was therefore made in spite of, rather than because of, data on the environmental impact of dumping at New London. The plaintiffs contend that the final EIS that the Navy issued in December 1973, containing the first detailed analysis of the New London site, was nothing more than a justification of this decision. The defendants, on the other hand, contend that the Corps' decision to use New London was not made until March 1974,[60] by which time all of the input required by NEPA to be part of an EIS had been provided. They argue that the decision was therefore made with due regard to its environmental impact and was entirely proper.[61]

On the parties' view of the case, the court's finding of the date of the Corps' decision to use New London is critical. Indeed, the defendants as much as conceded that if the court should find the facts to be as characterized by the

---

59/ See Exh. 17, supra note 49. The plaintiffs also rely on statements in the final EIS that the Corps "directed" the Navy to use the New London site. See Exh. 6A, supra note 1, ¶¶ 1.12-1.13. However, the defendants deny that this occurred, maintaining that the Corps only recommended the New London site during this period. See Brief for Defendants 11. For further discussion, see note 143 infra.

60/ See Exh. B, supra note 55.

61/ The plaintiffs, of course, also dispute the contention that by March 1974 all of the requirements of NEPA were met. See pp. 28-64 infra.

plaintiffs they would lose this case.[62] The court cannot agree with the parties' view of the case, however. No matter when the Corps' decision to use New London was made, it is undisputed that it could have been altered until the last procedural step had been taken and the permit had been issued. Assuming arguendo that all of the necessary environmental data was at hand before the permit issued, the court is unwilling to invalidate the Corps' action as long as the Navy supplied and the Corps considered the data in good faith. If it were acting in good faith, the Corps would presumably re-evaluate a decision if subsequent information showed it to be mistaken. And as long as this evaluation of all the necessary input occurs before the permit issues and the decision is finalized, it should not matter when the Corps "decides" to use a particular site.

Several factors compel the conclusion reached here. First, as noted earlier this year in I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 256-258 (D. Conn. 1974), it is possible to cure deficient impact statements with timely "supplementals" that include the data necessary to make the EIS sufficient and have been properly circulated among the appropriate "comment agencies."[63] See Citizens for Mass

---

62/ See Transcript (Oct. 10, 1974) 67-68.

63/ See 42 U.S.C. § 4332(2)(C) (1970):

> "Prior to making any detailed statement, the responsible Federal official shall consult

Transit Against Freeways v. Brinegar, 357 F. Supp. 1269, 1274 (D. Ariz. 1973); cf. Environmental Defense Fund, Inc. v. Froehlke, 368 F. Supp. 231, 236-237 (W.D. Mo. 1973) (supplemental sufficient even though not circulated for comment). But see Daly v. Volpe, 350 F. Supp. 252, 259 (W.D. Wash. 1972). If the Corps considered subsequent input in good faith, there would seem to be no reason to differentiate what has occurred in this case (in which supplemental data came in and was incorporated in the final EIS) from the cases cited above (in which the data was circulated in supplemental impact statements).

Second, the normal remedy when an EIS is found by a court to be deficient is an injunction and an order to shore up the statement. See, e.g., Natural Resources Defense Council, Inc. v. Morton, 337 F. Supp. 165 (D. D.C. 1971), aff'd, 458 F.2d 827 (D.C. Cir. 1972). Even though the project may already be underway, all that is demanded is that the necessary data be collected and considered. It would seem

---

63/ cont'd

> with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved. Copies of such statement and the comments and views of the appropriate Federal, State, and local agencies, which are authorized to develop and enforce environmental standards, . . . shall accompany the proposal through the existing agency review processes . . . ."

In the instant case all of the data that was collected was included, at least by reference, in the final EIS (Exhs. 6A & 6B). The plaintiffs have not complained that the EIS was not properly circulated for comment.

anomalous to hold that these agencies, who at worst tried to correct whatever deficiencies may have existed when they decided in June 1973 to use New London, are to be treated more harshly than those who have to be ordered by the courts to take corrective action.

The plaintiffs' argument has substantial force in urging that the purpose of NEPA's requirement of an EIS was to make sure that the decisionmaker consider the environmental impacts of major projects. An EIS should not be simply a post hoc justification for a decision already made. However, the way to insure that the EIS is properly used is not to deny the use of supplemental statements after a preliminary decision is made, but to demand that these supplementals be prepared and considered in good faith. In the present case the good faith of the Corps and the Navy is admitted by the plaintiffs,[64/] and the court finds no indications of bad faith by these agencies in the record before it. I therefore conclude that there is no violation of NEPA's EIS requirement if all of the information required by law was placed before the Corps in the form of an EIS and properly circulated supplementals in advance of the time the Corps issued the Navy a permit to dump at New London.

64/ See Transcript (Oct. 10, 1974) 54.

V. Alleged Deficiencies in the EIS

What is considered next is the adequacy of the information before the Corps. The plaintiffs contend that the information was inadequate under NEPA standards in the several respects considered below.

A. Cumulation of Impacts

One of the plaintiffs' claims is that the EIS is deficient because it assesses the impact of this dredge spoil disposal project in isolation. The plaintiffs argue that NEPA requires that the EIS contain data on the impact that this and all other similar projects will have.[65/] They stress that this project is but a part of the dumping which has occurred[66/] or which may be expected to occur[67/] at New

---

65/ See Plaintiffs' Memorandum, supra note 5, at 44-50.

66/ See Exh. D, Disposition Form, Sept. 19, 1974; Exh. 16, Stipulation ¶1. Since 1958 an average of approximately 240,000 cubic yards of spoil has been dumped at New London yearly. During the first eight months of 1972 a total of 2.1 million cubic yards of dredge spoil was dumped into the Sound.

67/ See Exh. 16, supra note 66, ¶¶ 2-6; Exh. 15, Stipulation ¶¶ 1, 3. One of the points particularly urged by the plaintiffs is that the EIS should have considered the proposed dredging of the Thames to a depth of 40 feet by the Corps. See Plaintiffs' Memorandum, supra note 5, at 45-47. The point might be compelling if the objection were to the EIS' treatment of the dredging of the Thames, for the interrelationship of this aspect of the Navy Project and the Corps project is clear. See Scientists' Inst. for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079, 1086-1088 (D.C. Cir. 1973). With respect to the challenged dumping, however, the

London, and they argue that it is quite important for the decisionmaker to be given an overview of the impacts of dumping. For example, the plaintiffs contend that if such information had been in the EIS, it is "possible that looking at the magnitude of spoils involved, as well as dredged material from projects elsewhere in Long Island [Sound], Congress, or even the Corps itself, might have concluded that it was time to develop [a] container island project."[68/]

In arguing that the Navy should have considered the impact of this and all other dumping, the plaintiffs rely upon the highway segmentation cases.[69/] In those cases

---

67/ cont'd

plaintiffs' point is less strong. The Corps is presently considering New London, inter alia, as a possible dump site, see Exh. 15, supra, ¶ 3, and the plaintiffs point out that the Navy's use of New London may serve as a precedent for the Corps' own, see Plaintiffs' Memorandum, supra note 5, at 46. It is still entirely a matter of speculation that New London will be chosen, however. It appears that the Corps' project, if approved, would not commence until at least 1980. See Exh. 15, supra, ¶ 4; Exh. 16, supra note 66, ¶ 6. Between now and then the Corps expects to undertake further studies to gather data about the best method of spoil disposal for this project. See Exh. 15, supra, attachment: Draft Environmental Impact Statement: New London Harbor and Thames River 3 (August 1972). Moreover, with continued dumping at New London between now and 1980, the New London dump site might well be "full" by the time the Corps needs a dredge spoil disposal site. Cf. Exh. 7B, supra note 47 (Brenton Reef, as the disposal site for several other projects, may be too full to handle the Navy's Thames spoil). Thus the court gives no more weight to the Corps' proposal than to others which the plaintiffs urge should have been discussed in the EIS.

68/ Plaintiffs' Memorandum, supra note 5, at 47.

69/ See id. at 49.

impact statements have sometimes been held deficient because they considered a deceptively small portion of a much larger project. See, e.g., Indian Lookout Alliance v. Volpe, 484 F.2d 11 (8th Cir. 1973); Conservation Soc'y v. Secretary of Transp., 362 F. Supp. 627 (D. Vt. 1973); Committee to Stop Route 7 v. Volpe, 346 F. Supp. 731 (D. Conn. 1972).[70/] The segmentation cases do not provide a coherent rationale for determining when the impacts of different projects must be

---

70/ The plaintiffs claim that this type of segmentation has been found improper in other contexts also, citing Hanly v. Kleindienst, 471 F.2d 823 (2d Cir. 1972), cert. denied, 412 U.S. 908 (1973), and River Defense Comm. v. Callaway, 6 E.R.C. 1977 (S.D. N.Y. July 3, 1974). This court finds both of these cases inapposite. As will be seen infra, Hanly contains language somewhat relevant to another part of the plaintiffs' argument (that the EIS should have considered the incremental impact of this dumping on the Sound as a whole); however it says nothing about needing to consider the impact of other projects on the environment. In Hanly the federal project at issue was a mid-Manhattan jail, and there were no other federal projects in the area whose impacts the plaintiffs sought to cumulate with those of the jail. River Defense Comm. involved a challenge to a Corps permit allowing a private citizen to dump rocks in the Hudson River. The Corps had not considered, except in cursory terms, the impact of this action on marine life in the river. The court characterized this omission as considering the project as an isolated phenomenon and cited Hanly for the proposition that such consideration is insufficient. Hanly does support the holding insofar as it says that the environmental impacts of a project must be taken into account; however, neither Hanly nor River Defense Comm. supports the plaintiffs' proposition that the impacts of all the projects in the area must be considered.

Although not cited to it by the plaintiffs, the court notes that Greene County Planning Bd. v. Federal Power Comm'n, 455 F.2d 412, 423-424 (2d Cir.), cert. denied, 409 U.S. 849 (1972), also condemns segmentation (in this instance, of a power project). Like the highway cases, Greene County offers no discussion useful here; however, it can be explained by the rationale of Scientists' Inst. for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079 (D.C. Cir. 1973), considered infra.

cumulated in a nonhighway context. However, the District of Columbia Circuit has done so in a case considering whether an EIS is required for a projected wide-reaching technology development program. In Scientists' Inst. for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079 (D.C. Cir. 1973), Judge Skelly Wright warned of the bandwagon effect some projects, there the nationwide breeder reactor project, have:

> "To wait until a technology attains the stage of complete commercial feasibility before considering the possible adverse environmental effects attendant upon ultimate application of the technology will undoubtedly frustrate meaningful consideration and balancing of environmental costs against economic and other benefits. Modern technological advances typically stem from massive investments in research and development, as is the case here. Technological advances are therefore capital investments and, as such, once brought to a stage of commercial feasibility the investment in their development acts to compel their application. Once there has been, in the terms of NEPA, 'an irretrievable commitment of resources' in the technology development stage, the balance of environmental costs and economic and other benefits shifts in favor of ultimate application of the technology. . . ." 71/

71/ 481 F.2d at 1089-1090 (footnotes omitted). Judge Wright developed a balancing test to help protect against this bandwagon effect by requiring an early EIS when the effect is strong and the potential impacts serious:

> "Statements must be written late enough in the development process to contain meaningful information, but they must be written early enough so that whatever information is contained can practically serve as an input into the decision making process.

[Footnote continued on following page.]

71/ cont'd

> "Determining when to draft an impact statement for a technology development program obviously requires a reconciliation of these competing concerns. Some balance must be struck, and several factors should be weighed in the balance. How likely is the technology to prove commercially feasible, and how soon will that occur? To what extent is meaningful information presently available on the effects of application of the technology and of alternatives and their effects? To what extent are irretrievable commitments being made and options precluded as the development program progresses? How severe will be the environmental effects if the technology does prove commerically feasible?" 481 F.2d at 1094

In the instant case, however, there is no bandwagon effect. Dredging the Thames and dumping the spoil at New London involves only the slightest investment that will compel further actions;[72] this is a single project, almost entirely self-contained. Thus the court is unable to agree with the plaintiffs that the EIS should have considered the cumulative impact of this and all or any other projects. The plaintiffs' concern that many projects are going on, each of which is adding pollutants to the Sound, cannot be belittled. It may be true that as each incremental harm is imposed and as the Sound becomes more polluted the need to preserve the purity of the Sound will seem lessened to the next decisionmaker.[73] Thus a comprehensive survey providing an overview of both the Sound and the projects which would pollute it is eminently desirable, and the court is informed that such a study is presently being undertaken by a special multi-state commission.[74] The duty to discuss the impact of all possible

---

72/ The parties have stipulated that approximately 200,000 cubic yards of spoil will be generated from maintenance of the Thames River channel through fiscal year 1980. See Exh. 16, supra note 66, ¶ 5. It is unclear how much, if any, of this figure represents additional maintenance required because of this project to deepen the existing Thames channel.

73/ Cf. S. Rep. No. 91-581, 91st Cong., 1st Sess. 5 (1969):

> "Important decisions concerning the use and shape of man's future environment continue to be made in small but steady increments which perpetuate rather than avoid the recognized mistakes of previous decades."

74/ See Brief for Defendants 8.

pollutants cannot be imposed on each isolated project, however. This is a single dredging operation unrelated to any other. The appropriate impact to consider in this case was the one actually considered: the impact of the dumping of the Navy's Thames River spoil.

B. Impact Area to be Discussed

Another alleged deficiency in the EIS is closely intertwined with that just considered: the plaintiffs complain that it was not enough to consider the impact of the Thames spoil on the New London dump site. Instead, the EIS should have considered the impact of the spoil on the Sound as a whole, they argue.[75/] To bolster this contention they adduce distinguished opinion that the Sound is a self-contained ecosystem in which interrelationships abound and any change affects the whole.[76/]

There is not much authority for the plaintiffs to draw upon, and they rely mainly upon language addressed to a somewhat different issue in Hanly v. Kleindienst, 471 F.2d 823, 830-831 (2d Cir. 1972), cert. denied, 412 U.S. 908 (1973) (citation omitted):

75/ See Plaintiffs' Memorandum, supra note 5, at 44-50.

76/ See id. at 47, quoting Henry L. Diamond, Comm'r of the New York State Dep't of Environmental Conservation, Exh. 6A, supra note 1, at A45.

> "In the absence of any Congressional or administrative interpretation of the term, we are persuaded that in deciding whether a major federal action will 'significantly' affect the quality of the human environment [and thus whether an EIS must be prepared] the agency in charge, although vested with broad discretion, should normally be required to review the proposed action in the light of at least two relevant factors: (1) the extent to which the action will cause adverse environmental effects in excess of those created by existing uses in the area affected by it, and (2) the absolute quantitative adverse environmental effects of the action itself, including the cumulative harm that results from its contribution to existing adverse conditions or uses in the affected area. Where conduct conforms to existing uses, its adverse consequences will usually be less significant than when it represents a radical change. Absent some showing that an entire neighborhood is in the process of redevelopment, its existing environment, though frequently below an ideal standard, represents a norm that cannot be ignored. For instance, one more highway in an area honeycombed with roads usually has less of an adverse impact than it if were constructed through a roadless public park. . . .
>
> "Although the existing environment of the area which is the site of a major federal action constitutes one criterion to be considered, it must be recognized that even a slight increase in adverse conditions that form an existing environmental milieu may sometimes threaten harm that is significant. One more factory polluting air and water in an area zoned for industrial use may represent the straw that breaks the back of the environmental camel. Hence the absolute, as well as comparative, effects of a major federal action must be considered."

Even if the plaintiffs' view of the law is correct, however, there can be no requirement that an EIS do what is scientifically impossible. At most the agency can be compelled to disclose the impossibility. See Scientists' Inst.

for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972). The defendants have presented uncontroverted evidence that it would be scientifically and practically very difficult, although desirable, to ascertain what impact the dumping of dredge spoil at the New London dump site would have throughout the entire Sound.[77/] Although not specifically mentioned in the EIS itself, that uncertainty is clearly inferable from the fact that the EIS discloses scientific uncertainty as to the much narrower issue of whether this dumping project will adversely affect even the immediate environs of the dump site.[78/] It would be meaningless for the court to require that an EIS which indicates that it is already at the bounds of scientific knowledge also indicate that inquiries beyond that frontier are not possible. No fault is found with the EIS on this score.

77/ See Testimony of Dr. John B. Pearce, Transcript (Sept. 20, 1974) 425-431. As noted supra p. 32 , a special study is now underway to explore the Sound more fully. However the Navy should not have to await the results of what will undoubtedly be a massive study if their own environmental investigation has been adequate. Cf. Jicarilla Apache Tribe of Indians v. Morton, 471 F.2d 1275, 1279-1282 (9th Cir. 1973). The plaintiffs concede this point. See Transcript (Oct. 10, 1974) 60-61.

78/ See, e.g., Exh. 6A, supra note 1, ¶ 6.01: "there is little available information on what the long term ramifications are in terms of vegetation, finfish, shellfish or other benthic organisms, or those higher organisms which live on marine biota. Thus there is no way to reasonably predict the effects of ocean dumping on long term productivity of the area."

C. Consideration of Alternatives

The plaintiffs make two claims of deficiency with respect to the consideration demanded by NEPA of alternatives to dumping at the New London site.[79/] The first is that the treatment afforded those alternatives which were considered was inadequate.[80/] Alternatives which the Navy considered may be broadly divided into two classes: alternative underwater disposal sites and alternative methods of disposal. The second of the plaintiffs' claims is that other alternatives existed that should have been considered but were not.[81/]

1. Treatment of considered alternatives

The requirement that alternatives be considered is one of the most stringent of all those governing impact statements; it is the "linchpin" of NEPA.[82/] The purpose of NEPA, of course, is to insure that decisionmakers will make reasoned choices that take environmental impacts into account, so the comparison of alternatives is an absolute prerequisite to provide such choices to the decisionmaker and thus guarantee successful implementation of the Act. It is not enough to

---

79/ See 42 U.S.C. §§ 4332(2)(C)(iii), (D) (1970).

80/ See Plaintiffs' Memorandum, supra note 5, at 38-42.

81/ See id. at 42-44.

82/ See, e.g., Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693, 697-698 (2d Cir. 1972); I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 247 (D. Conn. 1974).

consider alternatives in a conclusory fashion in the EIS. Not only must the statement's drafter have a basis for his assertions, but also he must present enough of this data that those who must comment on the statement are able to evaluate his recommended choice.[83] Otherwise the comment process mandated by NEPA, 42 U.S.C. § 4332(2)(C) (1970), could not proceed intelligently, for those who comment would be forced to accept the drafter's conclusions on faith alone.

The defendants argue correctly that the requirement of discussing alternatives is subject to a rule of reason.[84] Certainly the impact statement need not study every alternative in the same detail as it considers the recommended course of action. What is required is that

> "'the agency shall develop information and provide descriptions of the alternatives in adequate detail for subsequent reviewers and decision makers . . : to consider the alternatives along with the principle [sic] recommendations.' . . . 'Sufficient analysis of such alternatives and their costs and impact on the environment should accompany the proposed action through the agency review process in order not to foreclose prematurely options which might have less detrimental effects.'" [85]

83/ See, e.g., Silva v. Lynn, 482 F.2d 1282, 1286-1287 (1st Cir. 1973); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 836 (D.C. Cir. 1972); Montgomery v. Ellis, 364 F. Supp. 517, 521-522 (N.D. Ala. 1973). But see Fayetteville Area Chamber of Commerce v. Volpe, 6 E.R.C. 1891, 1894 (E.D. N.C., Feb. 1, 1974).

84/ See Defendants' Brief 16.

85/ Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 833-834 n.12 (D.C. Cir. 1972), citing S. Rep. No. 91-296,

Thus, although NEPA requires an investigation of alternatives,[86] it does not require an exhaustive study of an alternative about which so little is known that implementation would not be feasible. See, e.g., pp. 41-42 infra; cf. Sierra Club v. Lynn, 502 F.2d 43 (5th Cir. 1974); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827 (D.C. Cir. 1971). Other alternatives may be environmentally worse than the one recommended (even though less expensive), and the court will not interfere (nor is anyone likely to ask it to interfere) when the agency itself summarily rejects an alternative as involving too much danger to the environment. See pp. 40, 45 infra.

Even though NEPA's requirements are flexible, however, the flexibility does not provide

> "an escape hatch for footdragging agencies . . . . Congress did not intend the Act to be such a paper tiger. Indeed, the requirement of environmental consideration 'to the fullest extent possible' sets a high standard for the agencies, a standard which must be rigorously enforced by the reviewing courts." [87]

85/ cont'd

91st Cong., 1st Sess. 21 (1969); CEQ Guidelines, supra note 14. See Sierra Club v. Lynn, 502 F.2d 43, 62 (5th Cir. 1974); Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1113 n.19 (D.C. Cir. 1971).

86/ See 42 U.S.C. § 4332(2)(D) (1970).

87/ Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1114 (D.C. Cir. 1971).

If an agency would summarily reject an alternative it must at least indicate the basis for the summary rejection so that the comment process may be effective. See Scientists' Inst. for Public Information, Inc. v. Atomic Energy Comm'n, 481 F.2d 1079, 1092 (D.C. Cir. 1973). It is extremely difficult to respond, for example, to a statement that an alternative is "too expensive." Cf. I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 248 (D. Conn. 1974). On the other hand, if the statement is that the alternative is "too expensive because it would cost $5 billion," possibilities for comment abound. Many courts have agreed and required an economic-cost-benefit analysis to be included in the EIS. See Silva v. Lynn, 482 F.2d 1282, 1287 (1st Cir. 1973); Environmental Defense Fund, Inc. v. Froehlke, 473 F.2d 346, 352 (8th Cir. 1972); Montgomery v. Ellis, 364 F. Supp. 517, 522 (N.D. Ala. 1973); Conservation Soc'y v. Secretary of Transp., 362 F. Supp. 627, 635 (D. Vt. 1973) (Oakes, Cir. J.); cf. Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1123 (D.C. Cir. 1971); Daly v. Volpe, 350 F. Supp. 252, 259 (W.D. Wash. 1972); EPA Regulations, Preparation of Environmental Impact Statements, 40 C.F.R. § 6.32(d) (1974):

> "Where practicable, benefits and costs should be quantified or described qualitatively in a way which will aid in a more objective judgment of their value. Where such an analysis is prepared, it shall be appended to the statement. . . . This analysis shall evaluate alternatives in such a manner that reviewers

> independently can judge their relative desirability. In addition, the reasons why the proposed action is believed by the Agency to be the best course of action shall be explained. . . ."

To summarize, NEPA does not require an infinite expansion of an impact statement, but it does require a full disclosure of the basis on which the decision is to be made. See Monroe County Conservation Council, Inc. v. Volpe, 472 F.2d 693, 697 (2d Cir. 1972). Whether or not this full disclosure has been made is naturally a determination that must be made on a case-by-case basis. Thus I now turn to the "Alternatives" section of the Navy's EIS. Exclusive of maps, the EIS devotes only five pages to a direct discussion of alternatives to dumping spoil at the New London site.[88/] The first alternatives considered are total or partial land disposal. The statement identifies five potential land disposal sites and concludes that they do not include sufficient area to make total land disposal feasible.[89/] With respect to partial land disposal, two of the sites are summarily rejected because they have been identified by other agencies as "areas of significant ecological importance." As indicated above, this is a proper ground for summary rejection of an alternative.[90/] The other three potential areas are rejected in

---

88/ See Exh. 6A, supra note 1, ¶¶ 5.04.a-5.04.t, at 178-183.

89/ See id. ¶¶ 5.04.a-5.04.g.

90/ See p. 38 supra.

varying detail. The area of each is given and asserted to "be too small to allow settlement of the suspended solids from liquid dredge spoil before discharge back into the river."[91/] This recital probably provides enough data with respect to the failure of solids to settle that one with some knowledge in the area would be able to comment on the accuracy of the Navy's assessment that spoil solids will return to the river.

The second alternative considered is "dredge spoil farming," a technique in which the spoil is used to refurbish denuded areas. The Navy indicated that one type of spoil farming was being experimented with in Maryland, but that "there is insufficient information to justify large-scale use of the spoils in this manner."[92/] Because of the reference to the Maryland experiment, the EIS has a sufficient basis for its rejection of this form of spoil farming. The Navy has revealed the source of the data on which it relied, which will give a commenting agency an opportunity to challenge the adequacy of the Navy's interpretation by looking at this data independently. See Natural Resources Defense

---

91/ In addition one of the three sites is said to require an easement, to involve "excessive" cost, and to have insufficient lateral support. See, Exh. 6A, supra note 1, ¶ 5.04.e. The sufficiency of these reasons need not be considered in light of my conclusion that the Navy rejection of land dumping is sufficiently justified by reference to its inefficiency.

92/ Id. ¶ 5.04.h.

Council, Inc. v. Morton, 458 F.2d 827, 837 (D.C. Cir. 1972). Furthermore the grounds for the Navy's decision are prima facie proper: an agency is not required by NEPA's rule of reason to develop new technologies as alternatives.[93] With respect to two other types of spoil farming (use as fill on strip mines; use as fertilizer), however, the Navy did not claim insufficient information; its sole basis for rejecting these alternatives was stated in one short paragraph:

> "The drawbacks to these alternatives include great distance and transportation costs in addition to the political jurisdictional problems associated with long distance transportation of the spoils, truck or rail traffic with the resultant increases in noise and air pollution, possible leaching of toxic materials from the spoils and the subsequent contamination of land and water resources." [94]

While this is terse, it is adequate. The EIS contains a thorough chemical analysis, sufficient to disclose to commenting agencies its possiblity for use as fertilizer. There are no strip mines in this district, and it is obvious that transportation overland is much more costly than transportation by barge for two-and-one-half miles out to the New London dump site.

The third alternative considered is incineration. This alternative is also under study elsewhere: "Lockheed

---

93/ See p. 38 supra.

94/ Exh. 6A, supra note 1, ¶ 5.04.k.

Shipbuilding and Construction Company, Seattle, Washington, has designed a waterborne waste treatment system utilizing old ship hulls."[95/] The Navy's rejection of incineration is summary,[96/] but, as above, the reference to a known project suffices to avoid a deficiency in the EIS. Likewise, in considering container disposal the EIS refers to a detailed study of containerization of spoil made by the Corps in the EIS for one of its projects;[97/] finding that the results (especially in terms of cost) are less desirable than those of other alternatives, the Navy summarily rejects containerization. The court holds that the Navy EIS has given sufficient consideration to this alternative.

The Navy EIS gives somewhat more detailed attention to the possibility of building islands out of the dredge spoil.[98/] Several ongoing experiments are cited that to date have received favorable reports. However the Navy rejects the idea

---

95/ Id. ¶ 5.04.1.

96/ "The problems associated with this approach include possible air pollution, possible adverse affects [sic] of the ash residue in an ocean ecology and the large time factor necessary for the development of a workable system. In addition the cost would be substantially greater, at the outset than other methods." Id.

97/ See id. ¶ 5.04.m.

98/ See id. ¶ 5.04.n.

quickly on several bases:

> "Against the development of such islands is the lack of information concerning the impact such construction would have on marine life in the area. An extensive environmental impact study would need to be completed before such a project could go forward. Impediment to navigation and aesthetics in the areas chosen are also negative aspects which must be considered. Not all material from dredging operations is suitable for island construction. Much of the dredged material would be unsuitable and would need to be separated and disposed of elsewhere. . . . [T]he cost of utilization of disposal islands would be exceedingly high under current practices and . . . there would be jurisdictional problems surrounding control of ultimately chosen sites." 99/

The court finds these reasons for rejecting this alternative entirely sufficient under the rule of reason. The idea seems to involve environmental risks from erosion of the island wherever built in exactly the same way that use of the New London dump site poses dangers from erosion and dispersal of the dredge spoil. Thus, whatever the benefits to be expected from this alternative, they will not be such as to alleviate all the problems posed by the alternative the Navy has proposed. On the negative side, it is obvious that to separate the spoil would be quite expensive, and enough is revealed about the composition of this material that those who must comment should be able to knowledgeably evaluate the Navy's claim that the cost would be "exceedingly high."

99/ Id.

Having considered alternative methods for disposing of the spoil, the next matter to be considered is the information revealed in the statement relating to alternative sites for underwater disposal.

Dumping at dispersal sites (sites which will foster dispersal of the spoil) is quickly rejected because scientists do not agree on the long-range effects on marine biota of spoil intake and because current scientific opinion advises against the use of dispersal sites on environmental grounds.[100/] The court has already indicated that this type of summary treatment of an alternative is proper;[101/] in any event, the plaintiffs do not seem to challenge the EIS' treatment of a dispersal-site alternative.

The plaintiffs emphatically challenge the Navy's consideration of alternative containment sites.[102/] A page and a half of the EIS' treatment of alternatives is devoted to consideration of three alternative containment sites in Long Island Sound ("Sites 1, 2, and 3"). Site 2, located in the plains area northwest of Block Island, is rejected because the environmental impact of dumping there would be disastrous; this conclusion is not attacked by the plaintiffs, and the

---

100/ See id. ¶ 5.04.o.

101/ See p. 38 supra.

102/ See Plaintiffs' Memorandum, supra note 5, at 42-44.

court finds the Navy's treatment of this site entirely proper.[103]

The Navy rejected Sites 1 and 3 because it lacked sufficient information about the environmental impacts which would occur should the spoil be dumped at these sites.[104] A preliminary question is whether the Navy was completely excused from developing such information about these or any other sites in Long Island Sound. In its comments on the January 1972 draft EIS the EPA indicated that Long Island Sound should not be considered as a potential dump site,[105] a recommendation that the Navy adopted.[106] It was not until mid-1973 that changes in thinking by EPA and the Corps led the Navy to believe that the use of a dump site in Long Island Sound was permissible. No more than six months later, the final EIS, recommending the New London site, was released.[107] Given this chronology, it is not at all surprising that the Navy lacked data on alternative disposal sites within Long Island Sound. The real question is whether, under the

---

103/ See p. 38 supra.

104/ See Exh. 6A, supra note 1, ¶¶ 5.04.q, 5.04.t.

105/ See Exh. 6B, 2 Final Environmental Impact Statement: Dredge River Channel, at H10.

106/ See id. at I11; p. 20 supra.

107/ See p. 22 supra.

circumstances, the Navy was obligated in mid-1973 to delay its EIS, its dredging project, and its deployment of the SSN 688 submarine in order to generate this data. Or, to put it in other words, does the fact that the Navy legitimately excluded the Sound from consideration until mid-1973, combined with the defense interest in deployment of the new submarine class, excuse what might otherwise be deficient treatment of alternative containment sites by the EIS?

The court must conclude that the Navy's obligation to discuss Sites 1 and 3 is not excused. It appears that no court has ever been asked to rule on the sufficiency of the consideration of alternatives where there had arisen a situation similar to the Navy's prior justifiable exclusion of the Sound. However, I believe there is guidance in the cases of a couple of years ago dealing with whether an EIS was required for projects begun before the effective date of NEPA. In those cases courts were also faced with "innocent" agencies, for they had laid their plans and begun their work before there was any requirement of an EIS. Most courts found that NEPA did not apply retroactively to invalidate projects that had received final approval before the Act became applicable, but that it did apply to ongoing projects, i.e., those in which decisions were yet to be made.[108/] The latter group

---

108/ See Arlington Coalition on Transportation v. Volpe, 458 F.2d 1323, 1331-1332 (4th Cir.), cert. denied, 409 U.S. 1000 (1972); Greene County Planning Bd. v. Federal Power Comm'n, 455 F.2d 412, 424-425 (2d Cir.), cert. denied, 409 U.S. 849 (1972); Conservation Soc'y v. Volpe, 343 F. Supp. 761, 765-767 (D. Vt. 1972), and cases cited therein.

of cases is more closely analogous to the posture of the Navy's dredging project as of mid-1973. When EPA withdrew its objections to a Long Island Sound site the Navy had circulated a revised draft EIS, but the final site decision had not been made, and the dredging contract had not been awarded. The project was still in the planning stage and, by analogy to the cases cited above, subject to all the requirements of NEPA. Thus, even though the consideration of Long Island Sound alternatives might properly have been summary before mid-1973, thereafter the Navy could not rely on lack of information per se as a basis for rejecting alternative sites.

Neither is the Navy project excused from fully considering the Long Island Sound alternatives because of the importance of dredging the Thames in time to accommodate the first of the new submarines. As the Sixth Circuit pointed out in Environmental Defense Fund v. TVA, 468 F.2d 1164 (6th Cir. 1972), NEPA clearly requires that

> "'each agency of the Federal Government shall comply with the directives [of NEPA] unless the existing law applicable to such agency's operations expressly prohibits or makes full compliance with one of the directives impossible. . . .' . . . Accordingly, if the . . . Project is subject to the NEPA, appellants should not be permitted to rely upon '[c]onsiderations of administrative difficulty, delay or economic cost' to support a claim of exemption. . . ." 109/

109/ 468 F.2d at 1175-1176, quoting H. Rep. No. 91-765, 91st Cong., 1st Sess. 9-10 (1969), and Calvert Cliffs' Coordinating Comm., Inc. v. United States Atomic Energy Comm'n, 449 F.2d 1109, 1115 (D.C. Cir. 1971).

Because the Navy's project was concededly subject to NEPA, this court must conclude that Congress' intent was that the environmental concerns protected by NEPA would outweigh any interest of the Navy that would be harmed by full compliance with the Act.

Thus the question arises whether, under the rule of reason, the Navy's treatment of Sites 1 and 3 in the EIS was adequate to meet the requirements of NEPA. In answering this question, it is important to understand how the rule of reason applies in this case. Thus it is important to realize how limited is current scientific knowledge, even with the best of testing procedures, with respect to the environmental effects of dredge spoil disposal. The Corps has said:

> "With the existing data, it is almost impossible to differentiate between effects from one site to another, and there is a very obvious need to vigorously pursue a continued research program to fill in the many gaps that exist." 110/

Moreover, it is important to recognize that the Navy and the Corps are actively pursuing such research, largely by means of studying what happens to the spoil dumped at New London.[111] "Congress has recently authorized the Corps to undertake a

---

110/ Statement of Morgan Rees, Chief of Permits Branch (Corps), at Public Hearing in Groton, Conn., August 28, 1973, Exh. 6B, supra note 105, exhibit A, at 29.

111/ See Exh. 6A, supra note 1, ¶¶ 1.15-1.17.

nationwide 5-year $30 million research program to study the effects of spoil disposal."[112/] This type of detailed research obviously cannot be done in a vacuum--what is required is some dumped dredge spoil whose fate can be studied. The cases do not permit the courts to establish a timetable for the ascertainment of standards and methods for measuring the effect of the motion of the sea upon the dispersal of the separate ingredients in the spoil. Whether to proceed without such a study or to postpone the project while such a study is being undertaken is a question for the decisionmaker. Environmental Defense Fund, Inc. v. Corps of Eng., 325 F. Supp. 749, 760 (E.D. Ark. 1971), adhered to, 342 F. Supp. 1211 (E.D. Ark.), aff'd, 470 F.2d 289 (8th Cir. 1972), cert. denied, 412 U.S. 931 (1973).

The rule of reason is also informed by the scope of the risk that the project would create. In this instance polluted material which is attributable to sources other than the Navy project is being removed from the Thames River, which can only have a beneficial effect on the marine life located in the river,[113/] to be disposed of elsewhere, further

---

112/ Statement of Morgan Rees, supra note 110, at 28; see Statement of Col. John H. Mason (Corps) at Public Meeting in Groton, Conn., September 11, 1973, Exh. 6B, supra note 105, exhibit B, at 38-39.

113/ There is some dispute as to the current effects of pollution on marine life in the Thames. The EIS states that "the taking of oysters, clams, and quahogs is presently prohibited within the Thames River and New London Harbor due to gross

from shore and deeper under water. The EIS has done a good job in considering what will happen in the immediate environs of the site at which it is disposed;[114] at issue is whether or not the spoil will thereafter disperse and, to some extent, the danger that will be posed should it disperse. It is noteworthy that although other dredge spoil from Connecticut, including much from the Thames River, has previously been dumped at New London,[115] the plaintiffs have presented no evidence that this prior disposal has dispersed and harmed the marine life along the Connecticut shore that they seek to protect by this action. Thus the scope of the risk of this dumping, while perhaps not insubstantial, by no means amounts to a certainty of significantly adverse environmental damage.

113/ cont'd

contamination." Exh. 6A, supra note 1, ¶ 3.07.a; see Exh. 14, supra note 8, at 10. On the other hand, the Department of the Interior, in commenting on the initial draft EIS, indicated: "According to the State of Connecticut Department of Environmental Protection, the Thames River is currently classified as SC (suitable for fish, shellfish and wildlife habitat, recreational boating, and industrial cooling and shellfish harvesting after depuration; excellent fish and wildlife habitat; good aesthetic value)." Exh. 6B, supra note 105, at I7. Both assessments conclude that the Thames is a home for commercial and recreational fishing.

114/ See Exh. 6A, supra note 1, ¶¶ 3.17-4.08.

115/ Exh. D, supra note 66, provides a list of the sources of all dumpings at the New London site for which permits were issued between 1958 and 1972. The total dredged spoil dumped amounts to 3,356,298 cubic yards.

The Navy contends that in light of these factors the rule of reason demands no more than has been provided. With respect to Site 3 there is almost a page of discussion about environmental impacts that might be expected should the Thames spoil be dumped there.[116] With respect to Site 1 the individualized consideration is less extensive, but the EIS does indicate that a significant danger of environmental harm is indicated by an analysis of the site's water chemistry and bottom substrate.[117] In addition, much generalized material about the characteristics of eastern Long Island Sound, where Site 1 is found, is contained in earlier portions of the EIS. The court concludes that these provisions of information are adequate, in light of the rule of reason, to satisfy the Navy's duty to consider alternatives under NEPA. Cf. Fayetteville Area Chamber of Commerce v. Volpe, 6 E.R.C. 1891 (E.D. N.C. Feb. 1, 1974).

The plaintiffs also challenge the impact statement's consideration of the so-called "acid site," which lies about ten miles southeast of Block Island.[118] However, I must reach a conclusion with respect to this claim similar to that reached with respect to the claims considered above, even

---

116/ Exh. 6A, supra note 1, ¶¶ 5.04.p-5.04.q.

117/ Id. ¶ 5.04.t.

118/ See Plaintiffs' Memorandum, supra note 5, at 42-43. This site is marked "A" on Exh. 1, supra note 2.

though the plaintiffs have particularly urged that the acid site deserved full consideration in the EIS because it is the primary alternative to the New London site. The Corps' Scientific Subcommittee on Ocean Dredging recommended and the Navy agreed to this site for study concurrent with the use of the New London dump site in case adverse effects at New London should necessitate relocation of the dumping.[119/] Moreover, the Corps requested and the EPA gave the acid site provisional certification as a dump site in September and October 1973, which was after the Navy recommended use of New London but before the final EIS was issued.[120/]

The treatment given the acid site in the EIS is brief: its selection for concurrent study is disclosed as is the fact that to use this site, if technically feasible,[121/] would cost "at least $8 million more than using the New London dumping ground."[122/] The brevity of this treatment

---

119/ See Exh. 6A, supra note 1, ¶¶ 1.11b, 1.17.

120/ See Exh. E, Letter from Col. John H. Mason (Corps) to Regional Administrator, EPA, Sept. 27, 1973; Letter from Jeffrey G. Miller (EPA) to Col. John H. Mason, Oct. 25, 1973.

121/ In requesting provisional certification of the site by the EPA Col. Mason of the Corps wrote: "Use of this dumping ground presumes that certain questions of the physical capability of tow boats and scows to haul to an exposed area are overcome." Exh. E, Letter (Mason to EPA), supra note 120.

122/ Statement of Morgan Rees, supra note 110, at 27. Rees also indicated that it would cost about $9 1/2 million to use the New London dump site and about $17.3 million to use Brenton Reef. Id.

cannot be equated with inadequacy, however. The acid site alternative is of uncertain technical feasibility, is almost twice as expensive to use as the New London alternative, and is to be studied concurrently with use of the New London dump site. Especially given the Corps' rational policy of preferring to use established dump sites (about which more is and can be known) when possible,[123] the court does not find summary treatment of the acid site in the EIS violative of the rule of reason. Indeed it would make little sense to exhaustively study such an expensive and uncertain alternative when the study will be necessarily inconclusive.[124] The consideration of this alternative is sufficient to satisfy the Navy's obligations under NEPA.

2. Development of alternatives

The duty to actively develop alternatives stems from the same authority as the duty to discuss fully those alternatives that are considered--42 U.S.C. §§ 4332(2)(C)(iii), (D) (1970). And the duty to actively develop alternatives is also subject to a rule of reason similar to that considered above: not every alternative that anyone could dream up must be given the full treatment that NEPA demands for those alternatives that are considered (and are not summarily

123/ See, e.g., id. at 24.

124/ See p. 49 supra; cf. Fayetteville Area Chamber of Commerce v. Volpe, 6 E.R.C. 1891 (E.D. N.C. Feb. 1, 1974).

rejected for proper reasons). See, e.g., Life of the Land v. Brinegar, 485 F.2d 460, 470-472 (9th Cir. 1973), cert. denied 416 U.S. 961 (1974); Natural Resources Defense Council, Inc. v. Morton, 458 F.2d 827, 834-838 (D.C. Cir. 1972); I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 251-252 (D. Conn. 1974).

The rule of reason seems especially important in a case like this, where the issue is consideration of alternative offshore containment sites. Unless the Navy studied in the detail required for considered alternatives all of Long Island, Block Island, and Rhode Island Sounds, plus portions of the surrounding ocean, it is obvious that someone would be able to name a site that had not been explored. Obviously the Navy's failure to make this complete study (the magnitude of which would have been far greater than any other oceanographic effort of which this court is aware) should not preclude it from disposal of its dredge spoil. The rule of reason applied sensibly to this type of case requires only consideration of enough feasible alternatives that a reasoned choice can be made by the decisionmaker.[125/] See Friends of the Earth v. United States Environmental Protection Agency, 499 F.2d 1118, 1126 (2d Cir. 1974); Natural Resources Defense Council, Inc. v. United States Environmental Protection Agency, 494 F.2d 519, 524-525 (2d

125/ Of course this rule is not meant to allow an agency to ignore feasible alternatives presented to it simply because it has already considered enough alternatives to survive judicial review of the EIS. Cf. I-291 Why? Ass'n v. Burns, 372 F. Supp. 223, 249-252 (D. Conn. 1974).

Cir. 1974). The plaintiffs' claims that the Navy EIS has not considered some feasible alternative containment sites[126] must be examined in light of this rule.

The plaintiffs first commend to the Navy in a general way "[d]eeper sites, further removed from shore, with parameters far more clearly evidencing containment."[127] Read most charitably, this formulation suggests that the Navy should have found an example of a deep site far offshore and included an analysis of it in the EIS so that the decisionmaker could see the cost of achieving better containment than is possible in sites closer to the shore. In making this argument, however, the plaintiffs ignore the fact that the Navy had concluded that, although knowledge in the area is slight, current scientific opinion advised against adding pollutants to deep ocean areas.[128] It appears, in other words, that the Navy concluded that the sites proposed by the plaintiffs were not feasible and consideration of them thus would not aid the decisionmaker in reaching a reasoned choice. This court does not find fault with this conclusion.[129]

126/ See Plaintiffs' Memorandum, supra note 5, at 42-44.

127/ Id. at 44.

128/ See Exh. 6A, supra note 1, ¶ 5.04.o.

129/ Cf. p. 38 supra.

The plaintiffs also argue that the Brenton Reef site, recommended by the Navy in the revised draft EIS (Exh. 4), was completely and improperly dropped from consideration in the final EIS. They contend that this alternative, above all, should have been considered in the impact statement.[130/] However, the defendants correctly point out that the final EIS incorporates by reference the discussion of Brenton Reef in the revised draft EIS.[131/] Thus the only question with respect to the EIS' treatment of Brenton Reef can be whether it was deficient; this issue the plaintiffs specifically decline to raise.[132/]

130/ See Plaintiffs' Memorandum, supra note 5, at 43-44.

131/ See Brief for Defendants 16, citing Exh. 6A, supra note 1, ¶ 2.22.c.

132/ See Transcript (Oct. 10, 1974) 8-9:

> "THE COURT: Now your contention, I guess, is that this third or this revised draft submitted by the Navy was satisfactory?
>
> "MR. BUTZEL: There were limits in it which need not be discussed in terms of the revised draft. For your information, if there had been a litigation over the revised draft I think it would have been over the inadequate consideration of alternatives there and the alternative section - which I will reach in terms of the New London site.
>
> "But in terms of its determination as to an appropriate site, the kind of research that had been done, the kind of study and consideration that had been given to the selection of Brenton Reef, it was in my judgment an adequate impact statement."

VI. Alleged Errors in the Impact Statement

The plaintiffs make three additional claims with respect to the impact statement: (1) that the role of the Corps' Scientific Advisory Subcommittee in the decisionmaking process was misreported by the final EIS;[133/] (2) that the change between the revised draft and final statements in the conclusion as to which site was the "best" containment site environmentally (Brenton Reef in the revised draft EIS; New London in the final EIS) was unsupported by any evidence;[134/] and (3) that the findings of the Naval Oceanographic Office study that the New London site exhibited short term containment were unfounded.[135/]

The standard of review to be applied to these sorts of challenges differs from the strict "procedural" standard used above.[136/] At issue here is not whether the agency has turned square corners in following the procedures demanded by NEPA, but whether its findings are supported. With respect to this type of issue the test is whether the agency has acted arbitrarily and capriciously or on the basis of

---

133/ See Plaintiffs' Memorandum, supra note 5, at 25-28.

134/ See id. at 28-35.

135/ See id. at 35-37.

136/ See p. 15 supra.

insubstantial evidence.[137] See Conservation Soc'y v. Secretary of Transp., 362 F. Supp. 627, 632-633, 635 (D. Vt. 1973); Environmental Defense Fund, Inc. v. Corps of Engineers, 342 F. Supp. 1211 (E.D. Ark.), aff'd, 470 F.2d 289 (8th Cir. 1972), cert. denied, 412 U.S. 931 (1973). This standard, of course, is precisely that to which most agency findings are subjected during judicial review under the Administrative Procedure Act, 5 U.S.C. § 706 (1970). See, e.g., Wong Wing Hang v. Immigration & Naturalization Serv., 360 F.2d 715, 717-719 (2d Cir. 1966).

A. The Role of the Scientific Advisory Subcommittee

The plaintiffs' first claim of error is based on the impact statement's description of the role of the Corps'

137/ Inevitably, bright lines turn dim when it becomes necessary to characterize individual fact situations. Thus in this instance all of the alleged errors could be characterized as "procedural," for their effect is to make deficient the EIS ultimately set before the decisionmaker. For example, inasmuch as the first of these three claims alleges mischaracterization of the Subcommittee's role, it might be regarded as a bias in the EIS rather than as an erroneous agency finding. Cf. p. 17 supra. However, I am convinced that it is proper to review these claims using the "substantive" standard described in the text.

Some of the statements to which this standard will apply are conclusions about which site is best (e.g., the second of these three claims). In the mouth of the decisionmaker this conclusion is subjected to review only for arbitrariness, see, e.g., Conservation Soc'y v. Secretary of Transp., 362 F. Supp. 627, 632-633 (D. Vt. 1973). To subject the same conclusion in the mouth of another to a stricter standard would achieve nothing, and I conclude that NEPA does not require the court to do so.

Scientific Advisory Subcommittee in influencing the Navy to change from its recommendation of Brenton Reef in the revised draft EIS to its advocacy of the New London dump site in the final EIS. The Navy's description is summarized as follows:

> "As a result of the recommendations of the Scientific Advisory Subcommittee, the Navy has been directed by the Army Corps of Engineers to utilize the New London Dumping Ground." 138/

It is the emphasized language that the plaintiffs claim constitutes a distortion. Specifically, they say that the Subcommittee only concurred in the Corps' recommendation of the New London site, an interpretation based on documents by the Corps to that effect.[139/] According to the plaintiffs this misstatement of the Subcommittee's role made it appear that the switch to the New London dump site was made on the basis of scientific considerations rather than on the basis of cost and other considerations.

The defendants do not deny that this characterization of the Subcommittee's role is incorrect;[140/] in fact, the Corps itself first objected to this language.[141/] However,

---

138/ Exh. 6A, supra note 1, ¶ 1.12 (emphasis added). Language of similar import appears elsewhere, both in the final EIS and in other spots as well. See, e.g., Exh. 5, Addendum, supra note 53.

139/ See, e.g., Exh. 9, Memorandum from Vyto Andreliunas (Corps) to Division Engineer (Corps), Jan. 23, 1974.

140/ See Brief for Defendants 10-11.

141/ See Exh. 9, supra note 139.

the defendants do argue that this mistake is not sufficiently serious to invalidate the EIS. See Environmental Defense Fund, Inc. v. Corps of Engineers, 342 F. Supp. 1211 (E.D. Ark.), aff'd, 470 F.2d 289 (8th Cir. 1972), cert. denied, 412 U.S. 931 (1973). The court agrees. The EIS does not, as a whole, distort the role played by the Subcommittee. In fact exactly the point contended for by the plaintiffs--that the Subcommittee's decision was made on the basis of cost and other considerations--is explicitly made by the EIS.[142/] The Navy's misstatement is simply harmless error.[143/]

B. The Final Impact Statement's Conclusion

The conclusion of the revised draft EIS was:

> "Of the several containment sites, the most environmentally suited for the material to be disposed of is the previously spoiled dump site in Rhode Island Sound [Brenton Reef] . . . ." [144/]

142/ See Exh. 6A, supra note 1, ¶ 8.02, at 194.

143/ The plaintiffs also complain about statements in the final EIS that the Corps "directed" the Navy to choose the New London site as its recommended alternative, see id. ¶¶ 1.12-1.13, even though the defendants now contend that the Corps only recommended New London while the EIS was in preparation. See Brief for Defendants 11. The court is unable to believe that any misimpression was created and refuses to set a precedent that would require a project to be halted because of one or two poorly worded passages in a lengthy two-volume EIS.

144/ Exh. 4, supra note 42, ¶ 1.08.

Once again, however, the court is unpersuaded. Dr. Pearce testified that although certain sediments could be scoured away by currents of the velocity evidenced here, there is evidence that the dredge spoil was not so susceptible of erosion.[149/] Thus there is no clear inconsistency with the NAVOCEANO finding of short-term containment. Moreover, the finding of sediment scouring upon which the plaintiffs rely was subsequently withdrawn by the Oceanographic Office because it was found to be unsupportable.[150/] The agencies involved did not arbitrarily and capriciously or without substantial evidence conclude that the New London dump site exhibited short-term containment.

VII. The Corps' Selection of New London

The plaintiffs' final challenge goes to the ultimate decision of the Corps to use the New London site for disposition of the Navy's Thames River dredge spoil.[151/] Because this is directed squarely to the substance of the project, the plaintiffs concede that the "arbitrary and capricious" standard applies. However, they maintain that in this instance even this low standard is violated.

149/ See id. at 413-417, 450-451.

150/ See Testimony of Dr. Richard E. Smith (NAVOCEANO), Transcript (Sept. 12, 1974) 306-308, 328-335.

151/ See Plaintiffs' Memorandum, supra note 5, at 54-58.

The plaintiffs' argument must be rejected, however. Above I have indicated that none of the errors of procedure or substance alleged by the plaintiffs have been committed by the Navy or the Corps. Throughout I have stressed the careful nature of the decisionmaking process undertaken for this project. Three draft impact statements and an addendum were properly circulated; public meetings were held; the Corps and the Navy cooperated to achieve a mutually satisfactory result; a special scientific subcommittee reviewed the data provided about environmental effects. From all of this it should by now be clear that the Corps' ultimate decision to use New London cannot seriously be claimed to be unsupported or arbitrary and capricious. At worst it may not have been a perfect decision--some better method or site for disposal might exist; some different weighings of the economic and environmental trade-offs involved might be "better" in an abstract sense. But these are issues upon which this court does not sit in judgment. With respect to those issues on which I am obligated to pass, the defendants carry the day in every respect.

The plaintiffs' requests for relief are each denied. It is

SO ORDERED.

Dated at Hartford, Connecticut, this 13th day of December, 1974.

M. Joseph Blumenfeld

M. Joseph Blumenfeld
United States District Judge

UNITED STATES DISTRICT COURT

DISTRICT OF CONNECTICUT

FILED
Dec 30 3 11 PM '74
CLERK
U.S. DISTRICT COURT
HARTFORD, CONN.

NATURAL RESOURCES DEFENSE COUNCIL, INC., ET AL	:::	
vs.	:::	CIVIL ACTION NO. H-74-268
HOWARD H. CALLAWAY, as Secretary of the Army, ET AL	:::	

JUDGMENT

This cause having come on for consideration by the Court by the Honorable M. Joseph Blumenfeld, United States District Judge, and the Court having filed its Memorandum of Decision December 13, 1974, denying all of the Plaintiffs' claims for relief directed to those issues upon which it determined it was obligated to pass and finding for the Defendants in respect thereto;

It is accordingly ORDERED and ADJUDGED that this Complaint be and is hereby dismissed, and Plaintiffs' requests for relief are each denied.

Dated at Hartford, Connecticut, this 30th day of December, 1974.

SYLVESTER A. MARKOWSKI
Clerk, United States District Court

By: _____
Deputy-in-Charge

109

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF CONNECTICUT

Index No. H 74-268

NATURAL RESOURCES DEFENSE COUNCIL, INC., ENVIRONMENTAL DEFENSE FUND, INC., THE LONG ISLAND SOUND TASKFORCE, THE FISHERS ISLAND CIVIC ASSOCIATION, INC., FISHERS ISLAND LOBSTERMEN'S ASSOCIATION, INC., CONNECTICUT CITIZENS ACTION GROUP, NORTH FORK ENVIRONMENTAL COUNCIL, INC. and THE LEAGUE OF WOMEN VOTERS OF RIVERHEAD-SOUTHHOLD,

Plaintiffs,

-against-

HOWARD H. CALLAWAY, as Secretary of the Army; LT. GENERAL WILLIAM C. GRIBBLE, JR., as Chief of Engineers, United States Army; COLONEL JOHN H. MASON, as Division Engineer, New England Division, Corps of Engineers, United States Army; J. WILLIAM MIDDENDORF, as Secretary of the Navy; CAPT. C.C. HEID, as Commanding Officer, Northern Division, Naval Facilities Engineering Command, Department of the Navy; RUSSELL E. TRAIN, as Administrator of the U.S. Environmental Protection Agency; and JOHN A.S. McGLENNON, as Regional Administrator, Region I, U.S. Environmental Protection Agency,

Defendants.

NOTICE OF APPEAL

NOTICE IS HEREBY GIVEN that Natural Resources Defense Counsel and the other plaintiffs named above hereby appeal to the United States Court of Appeals for the Second Circuit from the order denying plaintiffs' injunctive relief entered in this action on December 13, 1974. ~~and from the final judgment entered herein on December , 1974.~~

Dated: December 23, 1974

Albert K. Butzel
Attorney for Plaintiffs
425 Park Avenue
New York, New York 10022
Tel.: (212) 838-2700

Haynes Johnson, Esq.
Byran, Parmelee, Johnson & Bollinger
460 Summer Street
Stamford, Connecticut 06901
(203) 327-2650

UNITED STATES DISTRICT COURT

DISTRICT OF CONNECTICUT

- x
:
NATURAL RESOURCES DEFENSE
COUNCIL INC., Et Al, :

Plaintiffs, :

vs. : H-74-268 CIVIL

:
H. CALLAWAY, Secretary of the Army
of the United States, Et Al, :

Defendants. :

- x September-October, 1974

HARTFORD, CONNECTICUT

B E F O R E:

HON. M. JOSEPH BLUMENFELD, U.S.D.J.

A p p e a r a n c e s:

For the Plaintiffs:

HAYNES N. JOHNSON, ESQ.
460 Summer Street
Stamford, Connecticut

ALBERT K. BUTZEL, ESQ.
PETER J. MILLOCK, ESQ.
Messrs. BERLE, BUTZEL & KASS
425 Park Avenue
New York, New York

For the Defendants:

HENRY COHN, ESQ.
Assistant United States Attorney
450 Main Street
Hartford, Connecticut

C H A R L E S T. W A Y,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you state your name for the Court.

THE WITNESS: My name is Lieutenant Charles T. Way, W-a-y, Civil Engineer Corps, United States Navy.

THE CLERK: Where are you presently located?

THE WITNESS: I'm attached to Northern Division, Naval Facilities Engineering Command, Philadelphia, Pennsylvania.

DIRECT EXAMINATION

BY MR. BUTZEL:

Q Now, Lieutenant Way, were you the responsible official from the Navy in connection with the preparation of the Revised Draft Environmental Impact Statement, the addendum to that and the Final Environmental Impact Statement?

A For Northern Division in Philadelphia, yes, I was.

Q Were there other people elsewhere?

A In the filing of the Impact Statement it must proceed through our normal administrative channels and, of course, it goes through, finally being filed by the Secretary of the Navy with the Council On Environmental Quality.

Q You were the principal person in charge of these statements? A. Yes.

111

* * * * *

by page, if that's what you want. I think it's fairly complete in the record of what's made there.

Q I'm interested in those comments that relate to containment and to the word "relative", in particular.

A I think one could -- you know, containment, the us of what does one really mean when he says containment site and that's such an absolute site, the whole tenor of this framework of the Comment Response Section in the Final Environmental Impact Statement.

Q What comparisons did you make or were made as between the containment characteristics of the Brenton Reef dumping site and those of New London?

A None. At that time Rhode Island Sound, as was described in the hearings, was not our primary alternative.

Q No. But in selecting New London as another site what considerations were given to the relative containment characteristics of those sites?

A Are you asking the question was there a comparison of the containment aspects of New London versus Rhode Island?

Q Yes, that's what I'm asking.

A My answer is no, to my knowledge. Not --

Q You are aware, are you not, that there is some six years' worth of study by Dr. Saila indicating that Brenton Reef is a containment site?

A I'm not aware of the six years. I know there is a

study by Dr. Saila and I've talked about that before.

Q Now in terms of this study, Exhibit J in Volume 2, how long was -- let me withdraw that.

In terms of Exhibit J, am I correct in understanding by your reference to Finding 3, I believe it was, on Page 82, that the basis of concluding New London was a containment site was principally current studies?

A As I explained to the Judge, there are a lot of things that define containment. I can't go beyond what the record says because I'm not an expert on containment.

Q I see. In other words, we are to ask someone else the specific questions on containment based on this study, is that correct?

A Well, I'm not an expert on it.

Q Do you know, sir, for how long the testing was undertaken, were measurements taken and used in this study for currents at the New London dump site?

A The answer is yes, but to tell you specifically how long I would have to go into the report and read it again to pick out the section. I could only say, in other words, what is in the report.

Q If I were to suggest that the report says 25 hours?

A I don't recall that, but that may be correct.

Q Do you remember whether the current meters that were used in this test on the New London site suffered some mal-

A In general terms I do.

Q Is there someone who would know in greater terms?

A Yes.

Q I'll defer my questions to that.

In connection with your project at New London --

A The what?

Q -- the Navy project, the Navy project and the disposal project at the Thames River in New London, what consideration did the Navy give to the Army Corps' proposal to do some further dredging up river from the site that you are now dredging?

A The Army Corps of Engineers' proposal is not up river. It overlaps with ours.

Our consideration thereof is shown in the Environmental Impact Statement in response to a question raised on the Draft Environmental Impact Statement. That question was raised by the Corps of Engineers, and I'll cite specifically where it is as soon as I go to the index again.

On Page II of Volume 2 of the Final Environmental Impact Statement we discussed that relationship.

THE COURT: Where is this, Page II?

THE WITNESS: Yes sir, Volume 2 of the Final Environmental Impact Statement; 6B.

Q (By Mr. Butzel) That is the second response on that page?

A It's the second response, right. The full text of their letter is found in the previous exhibit.

Q And that indicates that the Navy felt incumbent that it go ahead with its project first, right?

A Well, due to the planning timetable, as it says in the Impact Statement.

Q That didn't foreclose you from making an analysis of the potential cumulative impacts of those two projects, did it?

A The Army's project is highly speculative. I think that the people will say that later on. We are proceeding alone in accordance with our procedures.

Q I understand you are proceeding alone.

You did not make an evaluation of the potential cumulative impact of those two projects, did you?

A Our Navy procedures require that in every case where you prepare a Final Impact Statement you must consider not only the geographic extent of your action, but the timeliness of it over the time span over which it extends.

Q Well, we don't want to argue law. That will be a decision --

A That's what our procedures are, and that's what we did and we used in broadening or condensing whatever the action is.

Q Now would you answer my question, please; namely,

you did not assess or attempt to assess any cumulative impacts that might flow from your project in combination with an Army dredging proposal.

A That is true.

Q Were you aware that in 1972 the Corps prepared an impact statement for its project which suggested that the New London Dumping Ground might be used as the disposal site?

A I'm not familiar with that Draft Environmental Impact Statement, or Impact Statement.

Q Did you consider, in connection with this Impact Statement, the cumulative or possible cumulative impacts of the Navy's project with any others that are going on now in Long Island Sound or may be going on in the future?

A No, we did not.

MR. BUTZEL: Thank you, Lieutenant Way.

Thank you, your Honor. That's all I have of this witness.

CROSS-EXAMINATION

BY MR. COHN:

Q Now, Lieutenant Way, you told us that there were at least three reasons why you chose to put out an Addendum to the Revised Draft Impact Statement, is that correct?

A Yes, that is.

Q And is that reflected in the Impact Statement -- may I show you Page 8 of Exhibit 6A, Paragraph 1.09. Could

* * * * *

And on-land alternative was not discussed, right?

MR. COHN: There were references to it, your Honor, to that particular type of disposal site, but the disposal site specifically mentioned by Mr. Butzel was not considered by the Navy.

There were other sites on-land that are referred to in the Impact Statement. However, Mr. Butzel raised another one up that the lieutenant answered had not been considered.

THE COURT: Okay.

MR. COHN: Now passing to another issue:

Q (By Mr. Cohn) When you did this Impact Statement you corelated your material from various sources and various independent contractors working for the Navy, is that correct? Or there was one in particular?

A There was one particular contractor that did the majority of the work. There were lots of information sources that he used which are reflected in his literature citations in the Environmental Impact Statement, itself.

Q When he did the Final Statement did he have what we've called Exhibit J, or Appendix J, before him?

A Yes, he did.

THE COURT: Who is "he"?

Q (By Mr. Cohn) Could we have his name?

A He is the environmental consulting firm of Ecosystems Division of Jason M. Cortell & Associates of Wellesley Hills, Massachusetts.

THE COURT: Wait a minute. Let me get this straight.

BY THE COURT:

Q You're talking about someone who put this report together?

A Yes, sir.

Q I thought you were the man.

A No. I attempted to make that clear: that I was the coordinator of the report, the man that was responsible for the contents of the report, but not the man that prepared every page of the report.

Q You mean you hired a ghost writer to put it together?

A We hired a consultant, your Honor.

Q And paid him?

A Yes, sir.

BY MR. COHN:

Q What specific sections of this did he work on?

A I would say he prepared 99.9 per cent of it. Obviously, he didn't have anything to do with the public hearing transcripts and that sort of thing.

Q In other words, the introduction was not his work, but the graphs, the charts, that type of thing?

A Exactly.

BY THE COURT:

Q He put it together?

A He put it together.

Q But you are the one who is really responsible for what is in it?

A I'm the one that's responsible for making sure that it goes through and properly reflects the other agencies' comments, things like that.

In other words, he would basically be a scientist and I could be classified as more of an administrator of the report, your Honor, and coordinating the aspects.

Q Well, you were more than an administrator, weren't you? Didn't you get the material? Didn't you attend these meetings?

A I attended many of the meetings, not all of them. And I guess it's more than an administrator in that sense. But I was not the scientist that prepared the research studies on which the reports were made.

Q I thought you took responsibility and said everything in here you can vouch for that this was all considered and it was all before us and taken into account?

A I can say that.

Q You can say that?

A Yes.

Q Well, I don't want you to say it unless it's true.

A Well, I did not prepare it. I wouldn't want your Honor to think that I prepared every piece in there.

Q No.

A But I'm broadly familiar with, in fact more than broadly familiar with it and I do take the responsibility for the preparation of the report.

Q And for the validity of what is in there, that it's based on stuff --

A That it's based on some scientific facts and some scientific analyses.

Q That you have seen or participated in?

A In many cases I've seen them, in many cases I've participated - but not all. There is a certain professional level that one doesn't go through.

Q Yes, I understand that. You take the word of some experts?

A That's true.

Q But you did hear the experts or saw their reports?

A Yes, sir.

THE COURT: All right.

BY MR. COHN:

Q Now these experts, the Ecosystems people, did they have Exhibit J, that is Appendix J?

THE COURT: Is this a trade name?

MR. COHN: I believe it is.

THE COURT: Echo --

MR. COHN: E-c-o-s-y-s-t-e-m-s.

THE COURT: I was thinking of e-c-h-o.

All right.

Q (By Mr. Cohn) In any case, did they make use of volume 2, Appendix J, in writing up the Final for your review?

A I believe they did. In fact, I'm sure they did. They did.

Q And when you asked them to do this research for you did you show them or tell them in substance about your regulation 62-42c? Can you tell us what that is?

A That's the implementation of N.E.P.A. within the Navy at that time in April or October of '72.

THE COURT: I don't understand that there is any claim made that all of the proper steps weren't taken.

MR. COHN: I want to show, your Honor, that this particular section --

THE COURT: Except as to what is apparent, except what's been brought out here so far. Is that correct?

MR. BUTZEL: Well, I would have to add a modification to it, your Honor.

This is the first time that we have known that

a consultant worked on this report. There is no disclosure that I know of - and I think I've read this report awfully close - to indicate that there was someone other than the Navy personnel working on this and that there was a consultant working on it. That's a surprise to me, in the first place, and I haven't really developed my thinking on it.

I think that the failure to disclose that may be pertinent to our case. Other than that, though, there was not a claim that this was other than, you know, the questions of how it went together. In substance, that wasn't part of our claim.

THE COURT: So what this guy had before him is not material.

MR. COHN: It is to the extent, your Honor, that the claim is made that no consideration was made of other projects in the Sound and of the Corps project that was projected.

THE COURT: Do you want to point to something in this report that shows that there was consideration of these other matters?

MR. COHN: Your Honor, I would like to, through the witness, show that these consultants had before

also were given the comments that we had received on the Revised Draft and Addenda for their perusal.

And in Volume 2 they were given the transcripts, as I said; I believe the results of hydrometer analyses --

THE COURT: What are you looking at?

THE WITNESS: Specifically, in the Table of Contents as I was going down the exhibits.

Q (By Mr. Butzel) In Volume 1, could we just start there?

A Okay.

Q Beginning with Proposed Action.

A Yes.

Q Was that prepared by them?

A No. We gave them a copy of our funding or program documents that describe in physical parameters what we wanted to do in dredging the river.

Q I'm frankly interested in who wrote the various sections of these reports. That's what I'd like to know.

A If you mean by "wrote" the primary guy or the person who --

Q No. Was it you or was it Ecosystems?

A It was Ecosystems.

Q That's the case with the entire Impact Statement?

A Yes. Of course, I reviewed it and made comments and suggestions, or perhaps changed the wording in a few places;

but, you know, that's a typical editorial feature.

Q You were just acting as an editor in that case?

A Very definitely.

MR. BUTZEL: Thank you.

THE COURT: Well, on what basis did you make changes or additions, on your superior literary ability or what?

THE WITNESS: As I recall, the major area where I was involved in the Impact Statement was the basis or what happened historically - describing the events that occurred, especially during the timeframe, say, from April to the hearing timeframes.

I provided them my feelings on the hearings and what was said in addition to the transcript, things like that - although they were at the hearings so that they could hear that for themselves.

But I was generally involved in the coordination aspects of it, of their work, and the tenor that the work was taking.

THE COURT: Rather than the literary style?

THE WITNESS: Well, literary style inasmuch as I checked for punctuation and spelling where that was apparent to me, or the phraseology of various sentences, your Honor.

THE COURT: Were you concerned about the con-

tent, of the accuracy of the content?

THE WITNESS: No. As I considered them highly professional, I wasn't going to be questioning their content or the accuracy of the professional documents that they were using and their conclusions from them.

BY MR. BUTZEL:

Q As far as you are aware, were any specific instructions given to Ecosystems in respect of the Corps of Engineers' dredging proposal in the Thames River?

A I'm sure they were told what the Corps of Engineers' proposal was, and so in that sense certainly they had some specific thing given to them in their response.

Q Were you told to evaluate it, do you know?

A Not specifically. I don't know, I wasn't there at the time. I can't say.

MR. BUTZEL: That's all, your Honor. Thank you.

I should hesitate a moment for my co-counsel. We'll get along without it. Thank you.

MR. COHN: I have just one question now, on Exhibit 12.

Does your Honor have that?

THE COURT: I didn't think that came back to me, no.

* * * * *

WALTER FRANK BOHLEN,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you state your full name for the Court and your address.

THE WITNESS: Walter Frank Bohlen, B-o-h-l-e-n, 1 Scott Lane, Mystic, Connecticut.

DIRECT EXAMINATION

BY MR. BUTZEL:

Q Dr. Bohlen, would you state your occupation?

A I'm a physical oceanographer on the staff of the Marine Sciences Institute at the University of Connecticut.

Q Could you describe your responsibilities in that regard and what you do?

A My primary interest, research interest is in the field of sediment transport in coastal waters. I also teach a couple of courses in Physical Oceanography and Coastal Processes.

Q You are an Assistant Professor at the University?

A That's correct.

THE COURT: What university is that?

THE WITNESS: University of Connecticut.

MR. COHN: Your Honor, we would, of course, stipulate to any qualifications.

THE COURT: You think he's a qualified ocean-

ographer?

MR. COHN: Yes, your Honor. Unless the plaintiff --

MR. BUTZEL: That would be fine.

I wonder, we had prepared an affidavit that was submitted with the Order to Show Cause which sets forth in some length Dr. Bohlen's qualifications.

THE COURT: Sort of a curriculum vitae?

MR. BUTZEL: You don't object to that?

MR. COHN: Well, that part on qualifications.

MR. BUTZEL: How about the balance of it?

THE COURT: You've got a pretty good department in Oceanography over at UConn?

THE WITNESS: We're not a department yet, your Honor.

THE COURT: What is it?

THE WITNESS: We're within the Department of Geology.

THE COURT: Part of the Geology Department?

THE WITNESS: Yes.

THE COURT: Have you got any equipment that you use to go out on the water?

THE WITNESS: Yes, sir.

THE COURT: Boats?

THE WITNESS: Two 65-foot boats and a number of small boats.

THE COURT: Okay.

Q (By Mr. Butzel) Do you want to describe the Marine Sciences Institute for the Court, Dr. Bohlen?

A The Marine Sciences Institute is a branch of the University of Connecticut that has particular emphasis on marine sciences, marine sciences research and graduate training.

We provide facilities for use by all of the departments in the University.

THE COURT: Why do you call it the Marine Sciences Institute? Is there some outside money that comes in that way?

THE WITNESS: I think it's more in the university administration, your Honor, so that we can cut across departmental lines. The institutes are set up to cut across departmental lines. There are a number of institutes at the University of Connecticut.

THE COURT: Okay.

Q (By Mr. Butzel) Now, how long have you been there?

A Since 1969.

Q In that connection, have you had opportunity to do research and studies on dredge spoil transport and questions of movement of dredge spoil in Long Island Sound and in the

area of the New London Dump Site?

A Yes, I have. My initial interest was in the sediment transport characteristics in Eastern Long Island Sound. And we began that study in 1969, after I arrived at the Institute.

Since then we've done some detail studies of sediment transport around dredge spoil disposal sites, with particular emphasis on the New Haven disposal site.

Q And you've been doing that work for whom, sir?

A The dredge disposal work has been done for the Army Corps of Engineers, Northeast Division.

The studies of sediment transport in Eastern Long Island Sound have been done under various grants; some from NOAA, sea grant programs; some from the Institute of Water Research.

Q And those studies have given you -- you've had occasion in connection with those studies to consider the currents and the other aspects of water movement in the area of the New London Dump Site?

A Yes, I have. My primary interest in coastal transport right now is in storm effects on material transport. For that purpose we've set out a number of continuous monitoring stations to be able to study currents and suspended material concentrations over the year. These studies have been going on now for about two and a half years. We've had

buoys on stations for about two years.

Q And some of these stations, I gather, have been located in the area of the New London Dump Site?

A Yes, they have.

Q Now, have you had an opportunity to review the Environmental Impact Statement in this case?

A Yes, I have reviewed the Environmental Impact Statement.

Q And have you had an opportunity in that connection to review what has been referred to here as Exhibit J?

A I believe so.

Q The Navy studies that this included in the Impact Statement.

A Yes, I have.

Q Are you involved in the monitoring program that has been developed in connection with the New London study?

A Currently I work -- part of that study is confined to the sediment transport characteristics within the Thames River.

Q But it's part of the overall monitoring program in connection with this case?

A Yes, it is.

Q Now, could you just briefly describe -- well, are you familiar with the Navy's plans here to dump the spoil into the New London Dump Site?

A Yes, I am. I'm familiar with the project.

THE COURT: If you are not, we don't need you any more in this case.

Let's go ahead.

MR. BUTZEL: Okay.

Q In connection with the disposal of the spoils, can you briefly indicate what parameters the Navy used in its Environmental Impact Statement, insofar as they are stated, to develop or to determine whether that site is a good site or not?

A I believe that the primary emphasis -- the Navy scientists might be better able to comment on those, but the primary emphasis as I read the study was placed on the current measurements, with secondary emphasis placed on the sediment characteristics and distributions as determined by samples of the sediment in the vicinity of the disposal site.

THE COURT: Now, wait a minute.

The primary emphasis was on what, on the sediment itself?

THE WITNESS: On the current measurements.

THE COURT: On current?

THE WITNESS: The use of the current measurements to be able to predict whether or not spoils deposited over the site would move.

THE COURT: All right.

Then the secondary emphasis?

THE WITNESS: Was on samples of the sediment in the vicinity of the site, to be able to determine whether or not sediments that had been placed there in the past have moved.

BY MR. BUTZEL:

Q The standard that was used here was that it should be a containment site, is that correct?

A That's correct.

Q And can you explain the reason why it was thought a containment site was appropriate?

THE COURT: Well, it was changed to a "relative containment site", wasn't it?

MR. BUTZEL: All right. A relative containment site.

I'm not trying to be cute.

Q Do you agree that given the spoils that are involved here, the best way to try to handle them if we have ocean dumping is to put them in a containment area?

THE COURT: In a what?

Q Containment or relative containment site.

A I would agree to that and I believe that most scientists involved in spoils disposal research right now would also agree.

Our present state of the knowledge of the effects

of spoils disposal on coastal waters is simply not sufficient to be able to say we can allow them to disperse. If we're going to deposit them we want them to stay put. We want to contain them.

Q And that, in fact, was what the Navy stated in its Impact Statement, is it not?

A That's the way I read the Impact Statement, you're quite right.

Q The Navy concluded that this site would result in a containment of the spoils. Do you agree with that conclusion?

A I can't agree with that conclusion at all.

Q Would you indicate your reasons for that? Tell the Judge the reasons for it.

A In the past year studies of material transport in Eastern Long Island Sound have indicated that the concentrations of suspended material in the Sound are determined primarily by river discharge, materials that are supplied via rivers, and wind stress.

THE COURT: And what?

A The winds.

In an area like Eastern Long Island Sound, a high energy area that can only be characterized as a high energy area, materials out to a depth of 60 feet, 60 to 80 feet, move regularly in response to these two parameters.

Now, in the area of the Thames River site the dis-

charge from the river, from the Thames River, is of secondary importance.. Materials in the area are suspended, resuspended primarily under the effects of winds. As a result, if one goes out and samples concentrations of suspended material they will find that there is a regular yearly variation in the concentrations that march along very nicely with the yearly variations in the winds. We have yearly cycles in winds in the Eastern Sound.

So I can only conclude that in the area inside Fisher's Island Sound there are basically no containment sites. The material at any site in Fisher's Island Sound will move.

Q And you believe, then, that the spoils that are now being deposited and projected to be deposited from the Thames River by the Navy in this site are going to move, is that correct?

A They will move. How rapidly they will move is a question. But they will move.

Q Well, in what direction would you expect them to move when they do?

A Material suspended over, or resuspended over the site can only move in response to the net drift as characteristic of the area - and that has already been testified to be to the northwest.

Q And that is also based on your own observations that

it is to the northwest?

A That is correct.

Q To the northwest are what kind of areas, Dr. Bohlen?

A The northwest contains a variety of fairly fertile spawning and nurery grounds, estauries. The Jordan Cove area, the Niantic Bay area, further off down to the west the beginnings of the Connecticut River estuary area.

Q And the Niantic Bay and the other estuarine areas that you were referring to other than the Connecticut River some distance down are about how far from the dumping site?

A It's probably about five miles.

Q And the area of the Thames estuary just to the northwest, about how far is that?

A That's about a mile and a half, I'd say.

Q And you expect the spoils to move into those areas?

A I would, yes.

THE COURT: What?

Q Would you expect the spoils to move into those areas?

A Some fraction of the spoils would move into those areas, yes. I would expect that.

Q Would you expect the spoils generally to move westward into Long Island Sound?

A Yes, I would.

Q Now, you spoke about time. How soon do you think it would be before the spoils began to move?

A There would be some effect of the dumping operation practically immediately, due to the dispersal of the materials that are eroded from the block of material that is released from the barge as it settles through the water column. But this would be a fairly small amount because the materials that are in the Thames River, particularly the lower Thames River, are extremely cohesive and the block would stay fairly well together.

Once the material is on the bottom, the initial movement during the first year or so I would imagine to be very slight. This is because of the character of the spoils and the biological composition of the spoils; the burrowing worms, clams, and so forth. There's a very low population of burrowing critters in the lower Thames spoils. As a result, the materials remain relatively cohesive and stay together, stay in one place.

THE COURT: I see. It's only when some organism in the water gets to work on it?

THE WITNESS: That's, in part, true.

Also in part the effects of persistent storm effects on the surface of the sediment.

I say the breakup of the spoils probably wouldn't be noticeable, measureable probably for in excess of a year, maybe a couple of years.

I don't want to picture the erosion of the

spoils as anything that will be catastrophic. This will be a slow, long-term process. The spoils would be eroded slowly. So that the spoil pile should be pictured as being a persistent source of materials.

Q And particularly if there's 2,800,000 cubic yards down there, you're going to have quite a substantial source, are you not?

THE COURT: What?

Q With 2,800,000 cubic yards of the spoil down there you're going to have quite a substantial source?

A I would say that that's a substantial source of materials. It's one of the largest --

Q And over time you would expect these to erode away, is that correct?

A I would expect erosion to continue, yes.

Q And that would carry with it the various pollutants that are in the spoil, is that correct?

A That's correct.

Q Now, what kind of risk, in your judgment, does that pose to the fisheries and the area generally, the Connecticut Coast area surrounding the site and Long Island Sound?

A Well, not being a biologist I wouldn't care to detail the physiological effects of the spoils.

THE COURT: You could tell what's going to

happen. What effect it is going to have is for somebody else to say?

THE WITNESS: Yes.

THE COURT: Okay. I'll accept that.

So you've got somebody else?

MR. BUTZEL: Yes, we do have.

THE COURT: Okay.

MR. BUTZEL: I just want Dr. Bohlen -- he is, I believe, qualified to make some general statements about it and we will have another witness who will testify in some more detail. But I think that he has some opinions which are unquestionably qualified opinions as to the risks that are involved here.

THE WITNESS: Yes.. Well, the erosion of a block of polluted spoils presents to the water column a variety of pollutants that are contained, absorbed on the suspended materials. Those materials, in general, are ingested by the filter-feeding organisms that are --

Q Would you explain what a filter-feeding organism is?

A Such as clams and mussels. They feed on the filtered materials from the water column. The materials can be taken up and concentrated at the tissue level in the organism.

So that there are hazards involved in presenting to a filter-feeding population a variety, a ready supply of polluted spoils.

BY THE COURT:

Q Why do you call a clam a filter feeder?

A Because as opposed to a deposit feeder.

Q Well, I don't know.. I thought a clam had a stomach.

A Yes.

Q And what becomes filtered in the course of its feeding?

A In the water. They are ingesting water and sediment. So they are drawing in water, taking nutrients and foods from the water and passing water through. So they are feeding.

Q And what other sea life is there that does that?

A Well, the area is rich in forage feeders; that is, the lobsters and the flounder - both feeding down on the sediments, near the sediments.

If the sediments are polluted, certainly elements of that pollution will be taken up by the lobsters and the various forage feeders; crabs, lobsters and flounder. There have been instances of --

Q There have been instances of swordfish with mercury in it, right?

A That's on a little larger scale, but that's correct. That's correct.

But there are instances of gill disease in flounder, shell disease in lobsters and crabs in areas where they are exposed to polluted spoil.

That's a variety of spoils; it's not only dredge spoils, but industrial waste.

So presenting to an area that is rich in biological life an abundance of polluted spoil makes poor management sense. It's an unnecessary risk.

Q Well, somebody has to make decisions, sometimes, as to how much sense you're going to apply, right?

A That's correct.

THE COURT: So I mean that's not our problem in this case, I don't think. Maybe it will be.

MR. BUTZEL: Well, we want to develop the fact that we think there are at least better alternatives than this and I want to do that through Dr. Bohlen.

That's why I was asking him the question as to:

BY MR. BUTZEL:

Q Whether, in your opinion, this was a very poor disposal area?

A I'd say not only from the biological standpoint, that is the immediate impact on the local biological community, and its secondary impact on biological communities that use this area as a spawning and nursery ground; but also from a total resource standpoint.

This is an area that is a rich recreational area, that is essential to the economic health of Connecticut and the adjoining states. To hazard the recreational characteristics of the area because of placement of the spoils, if it's not entirely necessary, I also believe is an unnecessary risk.

THE COURT: Well, you jump from economic to recreational.

You mean economic in the sense that --

THE WITNESS: It may hazard the recreational attributes of the area.

THE COURT: They won't get as good a harvest in their lobster traps or the clams they dig would not be edible, right?

THE WITNESS: That's true.

THE COURT: That's the economic?

THE WITNESS: Well, that's one part of the economic, yes.

But in terms of the total resource, the economic can be the harvest attributes, it can be the aesthetic attributes - the beaches in the area and the coastal areas, it can be from the water quality. So there's a total resource.

THE COURT: It can be everything?

THE WITNESS: That's correct.

Q (By Mr. Butzel) And am I correct that the particular nature of this problem is because of the particular location of the site so close in towards these areas, in your judgment?

A In my judgment that's true.

Q Okay. Now, in your judgment are there then other sites that have been discussed in the Impact Statement or otherwise during the course of the proceedings that finally led to the permit that would be better sites than the New London for the disposal of this fill?

A In my opinion, there are a number of other sites that could be used to significantly reduce the probability of environmental damage.

Q And could you indicate what standards you apply in defining that site, that type of site? Then we will try to identify a couple.

A If I approached the problem from the standpoint of an oceanographer that's concerned with the transport characteristics of the site and --

THE COURT: What do you mean, transporting the spoil to the site?

THE WITNESS: No, sir.

THE COURT: Or the dispersal of the spoil from the site?

THE WITNESS: Yes, sir.

THE COURT: The containment aspect?

THE WITNESS: And in particular if I am asked to select a site that is, as far as possible, a containment site, then I would have to say that --

THE COURT: What do you mean "as far as possible"? As far away as possible?

THE WITNESS: No. How close can I approach the realization of containment.

THE COURT: Okay.

MR. BUTZEL: Relative might be the word.

THE WITNESS: Or to use the Navy's word, "relative", relative containment.

THE COURT: Well, it would have to be relative in the sense that it's not absolute.

THE WITNESS: Right.

THE COURT: We are not going to package this.

THE WITNESS: That's exactly right.

THE COURT: All right.

THE WITNESS: Then I would say there are two attributes that I would look for. One is depth --

THE COURT: Well, he didn't ask you what you looked for. He asked if there are better ones somewhere.

MR. BUTZEL: I want to establish the standards first, your Honor, and then we can designate the sites.

BY MR. BUTZEL:

Q What other sites, in your judgment, that have been considered would be better than the New London Disposal Site?

A Of the ones that are presently under discussion? I'm not sure --

THE COURT: Of those that were considered.

Now you've been all through this stuff that the Navy has had before it, right?

THE WITNESS: Yes, sir.

THE COURT: All right. Now, they made a bum guess, did they, when they picked this site?

THE WITNESS: I would say that the site is poorly selected.

THE COURT: There are better ones, then?

THE WITNESS: I would say there are better ones.

THE COURT: That they had before them when they were considering the problem?

THE WITNESS: That we all had before us probably, everybody had before us.

THE COURT: That's what he's asking, where are they and what are they.

BY MR. BUTZEL:

Q Could you explain which ones they are?

A There are two sites off of Fisher's Island that are being considered right now, either one of which would probably

serve more nearly a containment site. One is there's a 325 foot hole --

Q Could you mark that, Mr. Bohlen, with an F-1 and I'll try to show the Judge.

THE COURT: I think you'd better mark it B-1, so that we will know that it is Bohlen who is responsible for that choice.

(Whereupon, the witness indicated.)

MR. BUTZEL: Okay. Why don't we indicate to your Honor.

THE COURT: Two sites, B-1. That's what would you say, south of Fisher's Island?

THE WITNESS: South and east of Fisher's Island. Slightly south and east of Fisher's Island.

And the other is --

THE COURT: B-2.

THE WITNESS: -- a site that is slightly to the east of that. It is about 188 feet in depth shown here.

THE COURT: East of 1.

This is about 188 feet in depth. And what was the first one, how deep was that hole?

THE WITNESS: 325.

THE COURT: A 325 foot depth.

What have we got down there in the bottom, a

regular crater?

THE WITNESS: Yes, sir.

THE COURT: A chasm or what?

THE WITNESS: It's a hole. It's a depression, yes. Probably a relic kettle pond.

THE COURT: Is it all charted out?

THE WITNESS: Yes, sir.

THE COURT: Right on the Geodetic Survey?

THE WITNESS: Yes, sir.

THE COURT: Well, that's the way you picked them out, because you have the numbers on the chart?

THE WITNESS: I beg your pardon?

THE COURT: I mean you are assuming that the numbers on the chart are accurate for depth, right?

THE WITNESS: For depth, yes sir, I am.

THE COURT: And that's the way you picked out these holes?

THE WITNESS: Yes, sir.

MR. BUTZEL: I should say they are discussed --

THE COURT: Just a minute. I'm talking to the professor.

MR. BUTZEL: I'm sorry.

BY THE COURT:

Q You didn't go out there and measure these holes?

A We have on one site about, I'd have to guess now, about four years of data.

Q How did you happen to start getting data at these sites?

A Well, one of the sites is just fortuitous because it was one of the stations that was established as part of a Navy program that we had participated in, mapping the oceanography of Block Island Sound.

Q Which one is that?

A That's the 188 foot hole.

Q That's the B-2?

A B-2, yes sir.

Now, the counselor was asking what the criteria I would use for selecting sites with.

Q Yes.

A One of the first criterias to reduce the possibility of wind-induced motion would be to increase the depth of the site. These two sites satisfy that requirement.

Q Well, now criteria A: Reduce effective wind; right?

A Yes, sir.

Q That's the same thing as saying get it as deep as possible?

A Get it as deep as we can.

Q That's really one criterion then?

A That's true.

MR. BUZZEL: That is a criteria, I gather, which helps define a containment site, is that right?

THE WITNESS: That's one of the criteria. As Lieutenant Way pointed out yesterday, there are a complex of parameters involved in the specification.

Q (By the Court) All right. That's one.

A The other that I would have to go for is that to reduce as far as possible the probability of significant environmental impact in the near shore areas is to remove the sites from those near shore areas distance; get as far away from the near shore areas as we can.

Q All right.

A The combination of those two criteria --

Q How close do you think we ought to get to Spain?

A If you're asking me to get far off shore, off the edge of the Continental Shelf, then we get into other environmental considerations that would probably take most of our morning to discuss.

Q And who would we have complaining to us then?

A Probably an infinity of -- we have an international ocean dumping agreement. We have international anti pollution agreements. We probably would have an infinity of government sitting before us here.

Q Then part of the problem of distance then has to take into account the existence of other interests?

A That's correct.

Q That would oppose mutilization of areas that far away?

A That's correct. I'm sure there are people here from the Corps that can give you a very good background on the number of interests that are involved in the selection of further off-shore sites.

Q Well, I want to tell you that I'm not going to get into it.

A Yes, sir.

Q But I am interested in when you say distance, in that sense I was being a little facetious when I said how far out into the ocean.

Now, what are you talking about, being aware of these other interests that would step up and want to be heard?

A All right.

Q About how far are you talking about?

MR. BUTZEL: How far is the Continental Shelf is basically the question.

THE COURT: No, I didn't say the Continental Shelf. That was injected.

Q (By the Court) Is that what you meant?

A No, sir. I think there are other considerations.

How far off would I like to put the spoils if I had my preference - is that the question?

Q Well, I don't know. I have to assume when you say that that your preference is to avoid harmful environmental

impacts?

A Yes.

Q Right?

A Yes. Particularly in the rich near-shore areas, that's correct. Because I believe that damage to those areas will have a much larger areal effect.

Q Do I understand by that that you mean that you wouldn't insist on going far out to sea; you might be willing to go up the coast if that isn't a rich coastal area?

A One of the hazards -- in theory that could be correct. One of the hazards in the Long Island Sound area is that up the coast, if you mean anything like to the west, gets us into another infinity problem.

Q So there are too many rich areas, is that correct?

A That's correct.

Q So you are talking about going out?

A What we are talking about is going out.

Q And how far?

A The two sites that we have here are the closest inshore sites that look immediately better than the Fisher's Island site.

Another site that has been considered, and I would say on the basis of what little information we have available to it, some current measurements, is the Acid, I believe it was referred to yesterday as Site A, the Acid Site.

THE COURT: Well, you've given us B-1, B-2 and then 3.

MR. BUTZEL: This was marked on Exhibit 1, your Honor.

THE COURT: 3 is the Acid Site.

MR. BUTZEL: Yes. That was A.

And this is Exhibit 1 that we have been referring to, just for the record.

Q (By the Court) All right. Now, for ecological purposes, then, or environmental protection purposes, those are better sites than the one the Navy is now using?

A That's correct.

Q In your opinion.

A Yes sir, in my opinion.

Q Are there any factors that justify what you regard as poor judgment by the Navy?

A Any environmental factors?

Q Well, first any environmental factors. I would assume that your answer is no, that you've got better sites and from that standpoint?

A I think there will be an endless controversy about whether or not the disposal of dredge spoils in coastal waters will create significant environmental impacts.

Q Whether it will do any harm?

A Whether it will do any harm. I think that's right

now partly the case because we simply don't have enough information. We haven't been at the study of these effects long enough.

As a result, I have to view the problem from a statistical standpoint and say that there is the probability of significant environmental impact and weigh the probability, what that significant environmental impact might mean in terms of the marine resource.

If I believe that there is a probability of significant environmental impact, then I want to as far as possible take steps to reduce that probability. And in this case, from the transport standpoint, that means to reduce the probability of sediment movement; to increase --

Q That's what you mean by transport?

A That's correct. And to do that I believe two criteria can be applied - that's how we arrived at these sites - deeper and further out.

Q And both of those are to diminish the effect of wind on sediment motion?

A That's correct. There are significant tidal currents in this area. The tidal currents in both those areas probably are not all that different. The tidal currents serve primarily as a distributive mechanism.

Once the material is suspended, then they move under the influence of the tidal currents and the various

estuarine currents that are produced by river discharges. But the whole complex --

Q What does the wind and storm have to do? It has to do with the breaking up of the cohesiveness of the spoil at the time it is dumped?

A To predict the movement of spoils, to predict the movement of sediment it is not simply sufficient in a coastal area to measure the mean velocity of flow over the spoil.

Rather, you have to be able to characterize not only the mean velocity, but the turbulent structure of the flow. The turbulent structure of the flow, the more turbulent the flow is the more likely the stream is to erode and suspend the materials. The turbulent structure of the flow is governed largely by the surface waves. So that you can get a day --

Q The flow is --

A In and out. It is there all the time, back and forth.

Q And direction of dispersal?

A That's right.

Q Okay. But the direction of the flow from the currents here is of no controlling significance or weight, in your opinion?

A As far as the erosion of the materials go. As far as the net drift of the transported materials, where they are going to move --

Q And this was a meeting held [illegible]

Q As to direction, yes.

A That's correct.

BY MR. BUTCH:

Q And that, I think we determined from the New London Site, would be northwest, is that correct; the residual flow?

A Yes, sir.

Q Now, is there data in the Navy's reports themselves which tends to indicate that there is spoil movement occurring or likely to occur at the New London Site?

A I believe there is. I think Lieutenant Way read that one paragraph this morning. I believe it's also in the Environmental Impact Statement.

Q We have had some discussion here yesterday with Lieutenant Way on a meeting that was held on July 13th, I believe it was, at which Lieutenant Way drew the conclusion that the Scientific Advisory Committee, or as it's sometimes called the Subcommittee, had recommended the New London Site.

Were you at that meeting?

A Yes, I was at that meeting.

Q Could you indicate for me how you were asked to be at that meeting, by whom the invitation was extended?

A I was invited by the Army Corps to be at that meeting.

Q And during the course of that meeting do you recall the Scientific Advisory Committee having recommended the New London site?

A I don't recall that that happened at that meeting.

Q Do you recall or know that it happened at any meeting of the Scientific Advisory Committee?

A I really couldn't say. I don't --

Q But it was not at that meeting?

A It was not at that meeting.

Q Now, there is a monitoring program that has been developed in connection with the spoil disposal in the New London Dumping Site. Given the testimony that --

Well, are you familiar generally with the monitoring program that has been developed?

A Yes.

Q Given the testimony that you've already given, in your judgment would that monitoring program be adequate to protect against the risks that you've been describing?

A If the risk that I've been describing can be characterized as long term subtle effects, I don't believe that the monitoring program will be able to detail those, or to protect against those sort of subtle impacts.

Q The monitoring program, among other things, is designed to measure movement, is that correct, of sediments?

A That's correct, yes.

Q Now, if that would then offer no protection against movement if it were -- there is a time lapse element, is there not, involved here?

A In addition to the difficulty of being able to predict the movement of the sediment, there is a time lapse problem involved; that's correct. I do not believe that the sediments will move catastrophically, that there'll be large volumes of movement of sediments.

THE COURT: Well, the monitoring program is not a protective activity, is it? It doesn't affect the dispersal or the movement of the sediment?

THE WITNESS: It's protective in the sense that it's supposed to indicate --

THE COURT: Keep you informed as to what's happening?

THE WITNESS: That's correct, yes.

THE COURT: Yes.

But it doesn't prevent anything from happening?

THE WITNESS: No, that's quite right.

THE COURT: Or affect the speed or direction of what's happening?

THE WITNESS: No, that's also correct.

THE COURT: Just measuring.

THE WITNESS: That's correct.

THE COURT: Okay.

MR. BUTZEL: Your Honor, that completes my examination of Dr. Bohlen and he is available for Cross-Examination.

After you are done I wonder if we might at that point stipulate that the affidavit can go in, too?

MR. COHN: I can stipulate that it can go in in support of what he is saying.

MR. BUTZEL: Fine.

It is a part of the Court papers, your Honor, the affidavit that Dr. Bohlen drafted. It parallels --

THE COURT: His curriculum vitae?

MR. COHN: Well, it has conclusions, too, similar to what he said here.

MR. BUTZEL: Yes. It would just provide an early record of what he said, in effect.

THE COURT: Sure. May be marked.

Do you want to have a special number?

MR. COHN: This is already a part of the affidavit.

THE COURT: All right. Let's receive it as an exhibit. Exhibit 13.

(Plaintiff Exhibit 13: Affidavit of W. Frank Bohlen dated 8/26/74, marked full exhibit.)

THE COURT: You are going to cross-examine this witness, are you?

MR. COHN: I would like to ask just a couple of questions.

THE COURT: Sure.

MR. BUTZEL: Before we start, your Honor, Dr. Bohlen has provided me a copy of his curriculum vitae, which includes his publications. I wonder if I could just attach that?

THE COURT: To Exhibit 13, yes. Clip it on.

MR. BUTZEL: Thank you.

THE COURT: You may examine.

CROSS-EXAMINATION

BY MR. COHN:

Q I noticed when you were talking that you've worked with the Corps of Engineers and the Navy over many years, is that right?

A Oh, yes.

Q Several years?

A Yes.

Q Yes. So you are involved with them on this project and with other projects?

A Well, the Army Corps project is in New Haven.

Q That's right.

A That's correct. And the Navy's relationship has never really been formalized.

Q But you are involved in the monitoring, you've been asked to assist?

A Yes, we're working in the river with NOAA. NOAA's

a NOAA project.

Q Well, are you working on the actual -- assuming that this goes forward as proposed, will you be involved in monitoring that?

A In the Thames.

Q Let's assume that this litigation is decided in favor of the Navy and it goes forward as proposed.

A Yes. It's going forward presently.

Q It's going forward. Are you involved in that?

A Yes. Our monitoring program is going on right now. Dr. Reed can tell you about that.

THE COURT: Within the confines of the river?

THE WITNESS: Within the confines of the river. Our problem is to define the characteristics of the river before the dredging and how that dredging affects the characteristics of the river.

Q (By Mr. Cohn) All right. Now, you've worked in New Haven, you said, for the Corps of Engineers?

A Yes, I have. Yes.

Q Did this provide you with any indication of information on long term data?

A Well, the New Haven project is now approximately two years old. The first year was a pre-dump -- I'm sorry -- pre-dump year we were studying the dump site. The second year was the dumping operation. And we're into the post-dump

year. So it's barely two and a half years old.

If you're looking for the largest bloc of data on dredging, dredge spoils disposal, you look to Saila's work.

Q But I was directing your attention to New Haven.

A Yes.

Q Have you got any data available at all yet from that site?

A The length of the term is one year -- less than one year after the dumping has been completed. This is April of this year.

Q Are you telling us that you can't make a determination or you only have a short term?

A We only have short term data available.

Q What is your short term data?

A In what sense, in the sense of transport?

Q Yes.

A That there is some movement in the vicinity of the site; that historically the site has been affected by storms on a fairly regular interval.

Q What would you say about its containment? Is there relative containment at the New Haven Site from your research? Short term, of course.

A There is evidence of movement. Is it a containment sense in the strictest sense of the word: No, it's not a containment site. There's evidence of movement.

Planning Division, and particularly people who were working

Q What about relative containment?

A Relative to closer in shore in shallower water, there is containment there. But a better containment site would be probably further off shore, biological studies indicate.

Q You've talked about these other sites that are further off shore. Have you taken into account the costs of going farther from shore and how --

A I'm not sure that I should take into account in my considerations of the environmental effects --

THE COURT: I'll sustain the objection.

MR. BUTZEL: I'll make it.

Q Were you actually at the New London Site? Have you been there to the site where the proposed dump is going to take place?

THE COURT: He said he worked at that B-2, that 188 foot area.

MR. COHN: I'm talking, your Honor, about the proposed site, the actual site in question in the hearing; not his preferred site.

THE COURT: The one that is now being used?

MR. COHN: That's right.

A Have I been there?

Q And done studies.

A At the particular site?

Q Yes.

A On occasion, yes.

Q Have you published anything on that?

A We have a paper in press now that includes the station. We have one station that's right off the site, just in shore of the site, just off the north edge of the site. It sits right here. That's three and a half --

Q But certainly in the fall or late winter of 1973 you had done nothing at that site, is that correct?

A We've been working since 1971 in those sites. There's a lot --

Q At that particular dump site?

THE COURT: That's one of eleven?

THE WITNESS: We have an eleven station network that covers Eastern Long Island Sound. One of those stations is located on the northwest corner -- sorry -- northeast corner of the dump site.

Q (By Mr. Cohn) Had you reached any conclusions at that time in late '73 or so?

A In terms of the character of the movement in the area, it's what I stated earlier; that the movement, the concentrations of materials in suspension in that area are primarily the result of river discharge and wind stress. And in the Fisher's Island Sound area the primary effect is wind stress.

Q What I was asking, though, was you had reached these conclusions in the fall of 1970 -- or December of 1973?

A Our paper is in press right now --

Q That is not my question, sir. I don't mean to hassle with you, but you knew of these things in the fall, orally at least; they could have been expressed in the fall of 1973?

A Yes. Yes, probably.

Q And you have made a study - you say it is in press now - at that particular site, is that it?

A The study that's in press right now, covers Eastern Long Island Sound. It isn't specifically directed to that site.

THE COURT: But that's part of it?

THE WITNESS: But there's one station in there, if you looked at how that station varied over the year you would see it, yes.

Q (By Mr. Cohn) Now, did you attend the hearing or some hearings that were held by the Corps of Engineers on this project?

A We attended one in August, a public hearing; one in August of last year. August something, last year.

Q Did you make available to the public your findings as to dispersal, the problems of dispersal, and so forth?

A I didn't speak at that hearing. But the statements

were made -- I thought the case was made abundantly clear at that hearing.

I think if you'll review the proceedings you'll see that a number of people spoke to the dispersal of --

Q But you didn't specifically bring up your findings?

A No. We had a student that presented transport characteristics and heavy metal characteristics in the area at some length. That was Carlton Hunt and that statement is in the record.

Q And you yourself did not do so?

A No, I did not.

Q Were you asked by the Corps of Engineers to make a statement?

A No, I was not.

Q What effect does the river have on that, their dump site, vis-a-vis the dump site?

A The Thames River?

Q That's right.

A Very little effect.

Q Isn't it true that the river has been dumping various sediments in that area, too?

A Under certain very special conditions, fairly rare, the discharge from the Thames River is sufficient to carry materials out into Fisher's Island Sound. By and large the transport of materials in the vicinity of the mouth of the

Thames River is into the mouth of the Thames River from Fisher's Island Sound. The Thames River is a very poor source of materials.

Q Do you really have any hard data on dispersal, on long-term dispersal over time, as you've talked about?

A Where?

Q Anywhere.

A Sure.

Q Scientists know about long-term dispersal over time?

MR. BUTZEL: Could you clarify, Mr. Cohn, whether you are indicating about whether things disperse over a long time or whether the long-term impacts of dispersal.

THE COURT: Overruled. He's talking to an expert.

A I'm not sure that the question is clear.

Q Well, let me rephrase it for you.

You know or you've testified from your knowledge that this material will sit for a year or two basically as a block, I think you say in Paragraph 9 of your affidavit. It goes down like a brick, something to that effect; hard as a rock, something like that?

I'll get the exact language in the affidavit.

A I don't think it's important. I would say that that's basically correct.

I would say the materials in the lower river are fairly cohesive and that we would expect the materials to stay coherent, that dredged scoop of material to remain relatively coherent for some period of time. Now, how long --

Q Your danger, if I understand correctly, is that it will be a slow gradual process over a number of years?

A That's correct.

Q Has any study been done that you know of on the slow gradual process over a number of years?

A Okay. The longest bloc of data that I'm familiar with -- there are probably longer blocs of data available over the New York Bight off New York Harbor, but the longest bloc of data that I'm familiar with is in Saila's work in Narragansett Bay, and that's something on the order of six to eight years of data. These data have shown a general gradual recolonization of the spoil and some winnowing of the surface materials. Materials being dispersed in a fairly large area around the --

Q Did the benthic life and various creatures take on these characteristics that you've talked about; the clams take in and ingest the materials, and so forth?

A There is at the present time unpublished data - from my understanding it's to be published in September of this year - by the Environmental Protection Agency Laboratory at Narragansett, Rhode Island, indicating that there is some

effect to be observed at the tissue level, particularly in the kidneys of clams in the vicinity of the Brenton Reef spoils ground.

The apparent blackening, if you look at the kidneys they are black, under the microscope, is thought to have been caused by hydrocarbon uptake or by oily uptakes by the clams. These data are not published.

As I said before, the problem with the long-term impacts of dredge spoil disposal is that we just don't have enough data on long terms because the studies haven't been going on long enough. But these are the only data that I'm aware of on possible long-term deleterious effect due to this disposal.

Q And they certainly were not available in December of 1973, is that correct?

A They were not available, to my knowledge.

THE COURT: Are you going to be much longer here?

MR. COHN: One minute.

Q Have you seen this? This is Exhibit 10, for the record.

A I don't believe so.

Q Can you identify who wrote it?

A I would assume it was written by Dr. Pearce; John B. Pearce.

Q And this was a meeting held on what date?

A July 13th, 1973.

Q And can you read this last sentence here, the first page?

A "The Subcommittee recognized the New London spoiling site as the best site to use at the present time; it saw no need to transport spoils to another site further to the east."

THE COURT: You were at that meeting?

THE WITNESS: I was at that meeting, that's correct.

Q (By Mr. Cohn) And this is a misstatement then, in your opinion? At least you didn't gather that?

A I would hesitate to say that it was a misstatement. I'm trying to be fair to all concerned.

I should say that there was no discussion at the meeting on the part of the Subcommittee as to the use or the selection, rather, of the New London Site.

On the basis of comments that may have been presented to the assembled group, the Subcommittee may have concluded that the New London Site was the best site. But at the meeting there certainly was no discussion as to whether or not --

Q That particular meeting there wasn't?

A There certainly was no discussion.

Q But that comment could have been made at the meeting?

A That comment could have been made at the meeting.

Q Now the one last question I have is: You are familiar, are you not, with various regulations of the Corps of Engineers and EPA which suggests the use of previously existing spoil dump sites or disposal sites?

A I'm not familiar with regulations. I'm familiar with the intent as far as possible to do that, to use existing sites.

Q Would any of your sites that you've listed, the three sites, fall into that category?

A I don't believe so. The history of the, quote "acid ground", which is Site A, is somewhat obscure. But as far as I know it's never been used as a dredge spoil disposal site.

Whether it's been used as an industrial disposal site is not entirely clear to me.

MR. COHN: That's all.

A The others two have not been used as any sort of site, that's correct.

MR. COHN: Thank you. No further questions.

MR. BUTZEL: Your Honor, I have no Redirect.

I wonder if we might take a recess at this point?

THE COURT: In a second.

BY THE COURT:

Q Now, the study that you are engaged in for the Army Corps of Engineers concerns dredge spoil obtained in redredging channels that have become filled in, right?

A Yes, sir. The New Haven project, that's correct.

Q Do I understand that the spoil which is being dumped from the dredging in the Thames is not only restoring the channel to its former depth, but is enlarging it both wider and deeper?

A That's correct. Deeper.

Q Deeper.

A Certainly deeper.

Q Well, now when you go deeper does the character of the spoil vary from the spoil that constitutes a clearing out of accumulations over the years?

A Yes, it does. There's a general gradation in pollution from the surface to depth. Surface sediments are more polluted.

It depends entirely on the character of the sediments, how porous they are, how far the surface waters can percolate into the sediments. It also depends on the chemical --

Q Well, the pollutant characteristics can't be used interchangeably without taking into account the character of the spoil that's being obtained, right?

A That's true. If I understand you, I think that's true, yes.

Q All right. But I guess this is not part of your study?

A Not mine. There is someone working on pollution characteristics.

Q Well, we may get to that.

A One of our group is working on the uptake by shellfish in the Thames River.

THE COURT: All right, Professor. That's it?

MR. COHN: Your Honor, you asked me at the conclusion -- that's it for the doctor.

THE COURT: What's that?

MR. COHN: I don't mean to detain the doctor, but --

THE COURT: Then if we're not going to detain him let's take a recess and let him go.

MR. COHN: I would say so.

THE COURT: All right, that's it. That's the order of the Court.

(Witness excused.)

MR. COHN: You asked me yesterday to file a short two-page memo on what I was talking about at the end of the day about cumulative effects, which has been prepared. I would like to offer it up.

I will give them a copy.

THE COURT: All right. Mark it filed.

(Short recess.)

* * * * *

THE WITNESS: In any event, the winds were not

VYTO L. ANDRELIUNAS,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you state your name for the Court.

THE WITNESS. Vyto L. Andreliunas; V-y-t-o, initial L, A-n-d-r-e-l-i-u-n-a-s.

THE CLERK: And your address, Mr. Andreliunas?

THE WITNESS: 9 Snow Drive, Westwood, Massachusetts.

THE COURT: A-n-d-r-e-l- --

THE WITNESS: i-u-n-a-s.

BY THE COURT:

Q What is your business or occupation?

A I am the Chief of the Operations Division of the New England Division of the Corps of Engineers.

Q You know that job? Your job is Chief, right?

A I am, sir.

Q You know the job?

A I hope so.

Q You've been at it long?

A I've been chief now since 1972.

Q Well, before that did you have anything to do with the work that's done up there?

A I've been in the operations business since 1958.

direction is this Long Island study being carried out?

THE WITNESS: The New England River Basin Commission.

THE COURT: What in the world is that? Is this a federal agency or something? Interstate?

THE WITNESS: It is under the aegis of the federal government, but it's not -- well, it's called a Commission. It is not an agency. It is not a department of any regular federal executive department.

Q (By Mr. Butzel) It's a project that has been funded by the federal government, is it not, Mr. Andreliunas, for the express purpose of studying Long Island Sound as a whole?

A Yes. I believe it is a cooperative study in that I think some of the funding is derived from the states participating, as well.

MR. BUTZEL: Thank you. That's all the questions I have.

CROSS-EXAMINATION

BY MR. COHN:

Q Could you tell us, Mr. Andreliunas, how this draft, Exhibit 17, came to be written?

A Yes. As I explained, the purpose is to report on the status of activities regarding several things that were

going on at the time and I had been asked by people in our Planning Division, and particularly people who were working on the Long Island Sound study, as to what is the situation with dumping in the Sound, since that information would impact on their study.

Q What was the corelation between this particular document, this draft, and the decisional process made on the selection of the site at this New London Site? Was this used?

A This simply recounted some of the discussions that had gone on and the decisions that had been reached.

Q Was this used, this particular document used in the decision-making process?

A No. It merely recounted what had gone on leading up to our decision to notify the Navy that our best judgment was that the New London Site would be the primary dumping site.

Q Can you identify this document, just tell us what it is?

A Yes, sir. This document is a letter transmitting to the Chief of Engineers the Navy application for a permit to do work in the Thames River and dispose in Long Island Sound; and it carries our recommendations to the Chief of Engineers for action on the permit.

THE COURT: What is that. What exhibit are you talking about?

MR. COHN: We are going to make it an exhibit

right now, if your Honor please.

I believe that's B, is it not?

THE CLERK: B.

(Defendants' Exhibit B: Letter dated March 1, 1974 from Mason to Subcommittee, marked full exhibit.)

THE COURT: While that is being marked Exhibit B:

Q (By the Court) You said this draft here, Exhibit 17, recounted what had been going on?

A That's correct, your Honor.

Q And led up to your decision to advise the Navy?

A We had already advised the Navy at this time that the New London Site, as far as the Corps of Engineers was concerned, should be the primary site --

Q Should be?

A -- described in their Impact Statement.

BY MR. COHN:

Q This is from John Mason, your superior, to his superiors in Washington, is that right?

A That's correct.

Q This was on the Navy's application to dredge the Thames River?

A That is correct.

Q And this sets forth the actual decisional process that your boss, Colonel Mason, was using in recommending that

this particular spot be chosen?

A That the permit be issued, yes sir.

Q Could you read to us from Page 15, starting at the bottom, and go over to include the sentence on the next page?

A "It should be noted most emphatically that the Impact Statement refers to the Scientific Advisory Subcommittee as having made the recommendation to use the New London Dumping Ground. We had previously advised Navy officials that the recommendation was that of the Division Engineer. The Scientific Advisory Subcommittee is a strictly informal group of representatives of NOAA, EPA, U.S. Fish and Wildlife Service, NED . . . ", which is New England Division --

Q Corps of Engineers, right?

A Yes.

" . . . and various state environmental agencies, whose function is to advise the Division Engineer on scientific matters involved in ocean dumping. The decision on designating an ocean disposal site reflects the total public interest and not only scientific aspects thereof. The Impact Statement grossly misrepresents the function of that informal committee."

Do you want me to continue?

Q On Page 18 --

THE COURT: Wait a minute.

What was being conveyed by that statement?

THE WITNESS: What was being conveyed by this statement was that the Impact Statement says that the decision to use the New London Dumping Site was made by the Scientific Advisory Subcommittee. What we wanted to make clear was that we were not delegating our responsibility for designating dumping sites to any outside subcommittee; that, in fact, it was our responsibility to do so and that we had.

THE COURT: They were just some busybodies who stuck their nose into it?

THE WITNESS: We asked their advice on what we decided to do.

THE COURT: And you were not about to let them take over and make the decision?

THE WITNESS: We were not passing the buck to them, your Honor.

THE COURT: All right.

Q (By Mr. Cohn) Now, can you read to us on Page 18 --

THE COURT: You were just reading from what page?

MR. COHN: Page 14. Dated March 1, 1974.

Q Could you read Paragraph 4 on Page 13?

A "The conclusion is that the public interest would best be served by use of the New London Dumping Ground. However, if this area were used and was found to result in adverse

environmental effects or if legal or administrative action might seriously delay carrying out the work, it would then be in the best public interest for national defense purposes to dump at an alternative site which must be determined on the basis of scientific survey and coordination of political entities involved."

MR. COHN: I have no other questions of Mr. Andreliunas.

(Pause)

THE COURT: All this time, it's a double deduction: We deduct it from the ordinary time of adjournment.

MR. JOHNSON: Our problem is we hadn't seen this document before.

MR. COHN: Your Honor, I understand it was made available, but through an oversight it was not picked up. So I wouldn't have any objection to their reviewing it.

THE COURT: All right.

REDIRECT EXAMINATION

BY MR. BUTZEL:

Q Mr. Andreliunas, referring to this permit, would you please tell me what documents were submitted to the Chief of Engineers along with this?

I shouldn't say "permit". It's whatever the exhibit

* * * * *

R I C H A R D E. S M I T H,

called as a witness, being first duly sworn, was examined, and testified as follows:

BY THE COURT:

Q What is your full name, sir?

A Richard Eldridge Smith.

Q Richard Eldridge Smith.

And what is your business or occupation?

A I'm an oceanographer with the Naval Oceanographic Office.

Q An oceanographer and a naval officer?

A With the Naval Oceanographic Office.

Q You are a civilian employee of a government agency?

A Yes.

Q And you have an office somewhere?

A Yes, I do.. In Washington, D.C.

Q Washington, D.C.

Is this a big office, this Oceanographic Office?

A It employs currently about 1500 people.

Q And just where do you stand on the table of organization of 1500?

A I am in the Ocean Sciences Department, specifically in the Physical Oceanography Division.

Q And specifically what?

A In Physical Oceanography Division.

Q Did you have anything to do with this matter that we've been spending time on here?

A Yes.

Q Just what part did you have to play in preparing this Impact Statement?

A In preparing the Impact Statement, none specifically. However, I had a great deal to do with the preparation of Appendix J.

MR. COHN: And K, as well, sir?

THE WITNESS: And K, as I understand it to be this December Final Draft, yes.

Q (By the Court) All right. So you've been in this through the development stage and now you are in it through the controversial stage, right?

A Yes, insofar as Appendix J is concerned.

DIRECT EXAMINATION

BY MR. COHN:

Q And the study that was done?

A And the study, which is Appendix J.

THE COURT: What study now?

Are you talking about this monitoring program under the permit?

MR. COHN: No, your Honor.

There was a study done - and I believe the witness would testify to this.

Was it in June, in August of 1972?

THE WITNESS: It commenced in May of 1972 and field work was finished -- or commenced in June of 1972 and field work was finished in May of 1973, to the best of my knowledge. Analyses were finished at some later date.

Q Was this of the specific dumping ground?

A Yes, it was.

Q Where dumping is going on now?

A Yes.

Q And the data which you had at the time available was made a part of the Environmental Impact Statement, both J and K?

A Yes.

Q And there was introduced in evidence today further update of that investigation, or --

A I guess that's K, is it not?

MR. BUTZEL: No, that's not K.

THE WITNESS: I'm sorry.

THE COURT: What?

MR. BUTZEL: K are some statistics only in Volume 2 of the Environmental Impact Statement.

Q (By Mr. Cohn) I think we can agree, Doctor, that J is Phases 1 and 2; K is Phase 3, certain statistics --

MR. BUTZEL: And Exhibit 12, December, 1973

Final Report on New London Dumping Ground marked DRAFT, with covering letter saying there would just be some statistical changes.

THE COURT: Well, that report is one of December, 1973. Is that the final one? Is that K or is that subsequent to K?

MR. BUTZEL: Subsequent to K.

Q (By Mr. Cohn) Now this is K, right, of the Impact Statement?

A I understand now what K is, yes.

Q All right. So we are in agreement that the three documents that had been introduced are J to the Impact Statement, K and Exhibit 12, which is --

THE COURT: What?

MR. COHN: Exhibit 12, which was just introduced this morning.

THE COURT: I don't have it up here.

Q (By Mr. Cohn) Do you have a copy of that, if you need to testify from it?

A This December, 1973 one?

THE COURT: Yes.

A Well, let's put it this way: I have a later copy. The December, 1973 one that has been referenced here is a draft and is still not the final published copy.

Q This is the document you are speaking of, the Decem-

ber, 1973 document?

A If it includes Phase 3 it is, yes.

Yes.

THE COURT: Yes what? That's a draft?

THE WITNESS: That is as they have chosen to call it, a Final Draft, or a draft of a final report.

Q (By Mr. Cohn) There is something beyond that still to come out?

A Yes. We've gone over this, as any scientist would do, to editorialize it and clear up any common errors, and things like that.

THE COURT: All right. That is a draft.

Is the final report out now?

THE WITNESS: No.

THE COURT: Still not done?

THE WITNESS: It's done, but it has not been published by the Publishing Branch of the Office. It has not been printed.

THE COURT: Well, a final report has been made then, has been prepared?

THE WITNESS: That's correct.

BY MR. COHN:

Q Can you tell us what your analysis showed as to currents in the area of the dump site?

A We had four current meters placed in the area; two in the site and two my estimate would be about a quarter to a half mile north of the site.

The two inside the site for a 25 hour period indicated that the currents were or had an average velocity of about 3 to 4, 4½ -- I forget the exact number -- centimeters per second.

The two up north of the site, just outside of the site, had current speeds a little bit greater, maybe up to 5 or 6 centimeters per second. I don't remember the exact figures.

Q Was this the factor upon which you made a determination as to the possibility of erosion from the dump site?

A Well, this is one of many.

Q What were some of the others?

A Well, some of the others bear upon the nature of the material that is being put into the site. In other words, the material being put into the site is a rather cohesive gelatinous mass, sticky, holds together quite well. When one tries to erode this stuff it is quite different from attempting to erode some natural sediments.

Q What did you conclude from your studies as to the nature of the possible erosion from the dump site?

A Based on the current meter information that we got ourselves and historical data by several scientists who have

worked in the area, we concluded that the probability was quite small of any material, any appreciable material being transported from the site.

Q What about the fact that you did not actually study this at a turbulent time where there were storms in the area?

A Well, Phase 1 took place in June of 1972, which was -- and we were up here during the time of the hurricane called Agnes.

THE COURT: Phase 1 of your study? What do you mean by Phase 1?

THE WITNESS: There are three phases: Before dumping, immediately after dumping, and one year after initiation of the setting or seven months after the dumping season.

THE COURT: What about Phase 1?

THE WITNESS: It took place, a great deal of the sampling took place during Agnes, the hurricane Agnes. As a matter of fact, it curtailed it to some extent.

THE COURT: It what?

THE WITNESS: It curtailed it to some extent; it made it very difficult.

THE COURT: That was Aggie?

THE WITNESS: Agnes. Hurricane Agnes.

THE COURT: Well, among yourselves you call

her Aggie, is that it?

THE WITNESS: In any event, the winds were not --

THE COURT: Agnes, that came in the early fall of what, '72?

THE WITNESS: No. It came in June.

THE COURT: June of '72.

And what about that? You mean you had to stop on that account, is that it?

THE WITNESS: No. We got off the track there from the question.

THE COURT: I'm sorry. You know, you have a tendency to drop your voice a little and I'm going to ask you, Mr. Smith, to keep it up.

THE WITNESS: Yes.

THE COURT: Those naval fellows in the back have to hear what you are saying.

All right. Now, sampling took place during Agnes in June of 1972 and this had some effect upon the readings you obtained?

THE WITNESS: No. Phase 1. What I was going to point out was -- the question that the counselor asked alluded to turbulence on the bottom resulting from the effects of storms. And I wanted to make the point that Agnes was classified as a hurricane and our people, our team of scientists were up here

during it, and we received very severe rains in New London, but the winds were, according to testimony of these people, to be minimal.

THE COURT: The winds were minimal?

THE WITNESS: That's right.

THE COURT: So you are relating that to effect on turbulence?

THE WITNESS: That is related to turbulence. If you can get winds up to high speeds for a long period of time or for a reasonable period of time and hold them there, you can eventually cause turbulence in the natural sediments on the bottom.

It is quite unlikely that you could get from storms that occur naturally in this area a turbulent effect which would, in turn, have an erosive effect on the dredged material that they are dumping in the site presently.

THE COURT: All right. Now can you answer the question? Did it have any effect?

THE WITNESS: No.

THE COURT: And you had readings during and following the storm, is that it?

THE WITNESS: We were sampling during and following it, yes.

THE COURT: And the storm had no effect upon

those readings, discernible effect?

THE WITNESS: That's correct.

THE COURT: All right. That's the answer, then.

BY MR. COHN:

Q Did you study the site before -- now, this was a previous dump which you were looking into, correct?

A Yes.

Q There was a small quantity of dredging going on which didn't have anything to do with the project now at issue and it was that effect that you were studying, is that correct?

A That's correct.

Q Did you see the site before even this previous project began? Did you make a baseline determination of what the site was like?

A During Phase 1, yes; before the dumping began.

Q Now, there was something in Exhibit J to the effect that the area had been scoured. Do you know about that, whether that dump site had been scoured?

A That statement was under the section labeled "Oil and Grease" and there was discussion made by an individual who works under me, and which does not exist in the report that is going to be published. It does not exist in the report that we have submitted for publication.

Q Why not?

THE COURT: Why is that? Why not?

A Because the statement was made without physical basis and it was decided upon on a scientific basis that there was not enough support for it. It was made on the basis of oil and grease analyses and did not -- differences in values, and did not reflect any substantive scientific background.

It has been deleted and it is not, in fact --

BY THE COURT:

Q What was the scientific objection to including it? This man - who is a part of your Department, right?

A That's correct.

Q He said that there's evidence here that this has been scoured after a certain period of time?

A That's correct.

Q And he had some evidence consisting of findings of oil and grease somewhere?

A That's correct.

Q Where?

A On findings of oil and grease from other stations in the area.. Specifically, one station just north of the site. He assumed the value that he got there was a baseline value. From that he said when I do Phase 2 I get values higher than the baseline value and --

Q Ergo there has been scouring?

A ...sentially.

Q What was wrong with that?

A The variation in the oil and grease numbers between samples and the precision of sample analyses in the lab is sometimes greater than the difference between these two sites, and one site certainly isn't enough to compare it with.

And if your error is greater between samples, or the variation between samples is greater, it is very difficult to make any conclusion on the basis of that. And he would deny it also.

Q He would deny that, that he had a valid basis for that observation; right?

A That's correct.

BY MR. COHN:

Q Now, you heard Dr. Bohlen's testimony on the long-term effects. Can you give us your impression of that or your findings on long-term effects, if you know?

A We found between the three phases - before, during and after - no significant differences in the variables that were measured, generally speaking, to the best of my knowledge.

And we also found at the end of seven months after the dredging ceased that the dredged material was still in the area inside the dump site, the one square mile. Specifically, in one place there was a depression in which the bathymetry showed a change of two to four feet. We can only

attribute this to the dumping of spoil in the site. Seven months later the bathymetry shows that this difference of two to four feet arranged across this depression is still there.

Furthermore, in the case of the bathymetry on the first phase we noticed an area just in the north central region which previous charts had indicated had a depth of 60 feet or more. Our bathymetry showed this to be approximately 36 feet.

These charts then were put out by - most of them - the Naval Oceanographic Office, which supplies most of the charts of this nature, or has access to them and is responsible in many cases for making them, was corrected - whether those charts are in existence or not today. But the bathymetry measurements were given to the people and it was corrected.

So the depth was not 60 feet in that area; it was more like 36 feet. And it could be a navigational thing that ship drivers might like to know about, and so they were notified and the chart was corrected, I believe.

THE COURT: What kind of a chart do you call that? Bathymetry?

Q (By Mr. Cohn) What is bathymetry?

A Bathymetry, you're talking about the --

THE COURT: What do you correct, this Geodetic --

THE WITNESS: If new charts like this are out,

they will presumably have those corrections on it.

Q (By Mr. Cohn) Can you tell us something about the biological life, any studies that have been made on that?

THE COURT: Wait a minute.

BY THE COURT:

Q Seven months after the dredging ceased you measured it again, right?

A That's correct.

Q Well, now when you say the dredging you mean also the deposit of spoil in this place?

A Yes.

Q And seven months later you found no change, is that what I understood you to say?

A We found no change in some of the variables.

The bathymetry, if you are speaking about the bathymetry, the bathymetry we found this difference right off. What we are saying is --

Q Well, that's a difference you couldn't account for unless you say the first measurement was wrong?

A No. Well, you might be able to account for it, yes.

What I am saying about the first measurement is there is material there which wasn't there several years ago, and I wonder where it came from.

And I am suggesting that the site has been used for a dump site over the past, according to what I've heard from

the Corps of Engineers, ten or fifteen years, at least, and that that material is very likely spoil material that has been dumped there sometime over the past ten, fifteen years.

Q All right. Now having made that scientific deduction or logical deduction, did you go back to the records to find out how much stuff might have been dumped in there during that period?

A No, we didn't.

Q You didn't try to see whether or not your deduction would prove out, if you applied the actual figures?

A Well, we couldn't determine the actual volume, so it was just a matter of that there is a significant decrease in the depth of the water there, in which it is bottom sediment, bottom material. And the actual amount, since we know it has been used for dump site, the actual amount wouldn't be helpful because you couldn't determine how long and how much had been in the site.

Q Or over what area?

A Right.

BY MR. COHN:

Q Can you tell us about the biota or the biological life there?

A Our first analyses of the bottom fauna, benthic fauna in the site is in the record as Phase 1. And there were certainly bottom dwellers there, whatever they may be;

ampeliscads, amphipods, cumaceans which are crustaceans. After you dump, these were greatly decreased simply because you bury them, in numbers.

However, seven months after the dumping took place -- after the disposal in the site took place --

THE COURT: What is this, Phase 3, or 2, or what?

THE WITNESS: Phase 3.

THE COURT: All right.

A The amphipods were back there in greater numbers, significantly in greater numbers than they were originally. They were back there in the form of female egg-laden bugs, if you like. There were many juveniles and they had repopulated the area to a much greater extent than they existed there originally.

Q (By Mr. Cohn) What about the effect on the food chain that we heard reference to? Can you comment on that?

A No, I can't comment on that.

THE COURT: Well, you are suggesting that it was the formation of a reef that made this a suitable place for these amphipods or that this spoil carried food for them, or carried sustenance ingredients?

THE WITNESS: Principally I'm suggesting that they came right back and the spoil material didn't

affect it.

THE COURT: That's enough for you. You don't care why?

THE WITNESS: I suspect there was some food in the form of nutrients from the spoil, yes.

Q (By Mr. Cohn) Have you investigated the river situation, the Thames River, the amount of material that comes out of the river?

A I haven't investigated it myself, no.

Q Are you knowledgeable in that area?

A Not specifically. I'm knowledgeable about sediment transport in rivers.

Q Would there have been a great deal of sediment transport from the Thames near the New London Dumping Ground?

A There would have been some, certainly. When it rains as hard as it did, for instance, during Agnes you get a great deal of land drainage going into the Thames River. The river increases in volume. The river increases in erosive power. It digs its channel deeper. It may tend to widen its channel, relatively speaking. And it carries a high sediment load, relatively speaking - particularly during a storm.

Q Is this material the same as what is being dredged from the river?

A Well, certainly to an extent. It's coming out of

the same river that they are dredging out of.

Q Did you investigate whether the spawning areas that might have been affected by this sediment are still there or affected in any way?

A We didn't look at spawning areas at all.

Q How would you compare the relative amount of what came out of the river as opposed to the Dumping Ground?

A Well, I couldn't.

In terms of volume, I couldn't compare them unless I had data on the Thames River sediment load over a reasonable period of time. However, there is significant amounts of material that come down any river during storm conditions and during normal conditions.

THE COURT: You don't know whether coming down the river got out to this dumping site anyhow, do you?

THE WITNESS: No. But it's quite likely. The dumping site is only two miles from the mouth.

THE COURT: Well, there are a lot of directions in which it can go after it got out of the mouth --

THE WITNESS: That's right.

THE COURT: -- without going two miles out to that spot?

THE WITNESS: That's right. Including that spot.

THE COURT: Yes. So you have no way of tracing --

THE WITNESS: No.

THE COURT: -- anything from the river to that spot through its natural flow, unless you know that that's the way the current runs?

THE WITNESS: We didn't and we don't. I'm sure it could be done.

THE COURT: Yes.

THE WITNESS: Right.

Q (By Mr. Cohn) Just one final question. Do you have any thoughts on the long-term effects of the Navy using that particular spot to dredge, or is there any way of knowing? By "long term" I mean beyond two years, let's say.

A Long-term effects. Could you be a little more specific in terms of --

Q Erosion, dispersement of the spoil.

A In terms of transport an erosion or dispersement of material on the basis of our study and what I know, I don't believe in two years that you would -- let's put it this way:

I believe at the end of two years the material is still going to be there, most of it. Now, I mean maybe 90 or 95 per cent. This is an estimate.

Q How about ten years? Any way of knowing?

A I have no way of knowing. But I would certainly

wonder about the past dumping that has gone on in this site in terms of its effect on the area nearby.

If the spoil material is going out of there or has been going out of there, certainly over the past ten or fifteen years, I would expect some adverse effects if the material is polluted.

Q This includes the river, as well? You would expect something combined from the river and the dumping ground, and so forth and so on?

A Yes, I think so.

I mean if you're getting pollutants transferred around that are affecting the fish life or something like that. But you're getting sediments brought in and out with the tides, too, and these are the first sediments that are going to be stirred up; those that are being brought in and brought out with the tides that are easily accessible.

They, at times, are going to cover the spoil. And when a storm comes the first thing that's going to be picked up are these sediments, the natural ones. They are not of the same nature as the dredge spoil material, which is going to be much more difficult to erode and move than the natural materials that are in Long Island Sound, or coming out of the river.

Q So the natural materials coming out the river would be more likely to be --

A Easily entrained and transported, yes.

MR. COHN: Thank you.

BY THE COURT:

Q Before they get started to cross-examine, Mr. Smith, you say you're an oceanographer. I assume that means you've had some special education and training?

A May I clarify that for you?

Q Yes.

A I have a Bachelor's from New Hampshire in geology; an MS from Illinois in geology; and a PhD from Penn State in geology.

I have principally worked in the area of marine chemistry, specifically on sediments, since I've been with the Naval Oceanographic Office; and have been involved in dredging and dredge spoil in other places such as Mayport, Florida, and in analyses of sediments and the collection of them and the handling of them and the processing of them from at least thirty harbors in the past two years in the United States for the Navy.

And I am an oceanographer according to the Office classification because although I'm trained to be a geologist, oceanographers are biologists, geologists, engineers. It's a multi-disciplined type of thing.

Q It's a what?

A Multi-disciplined.

Q It's a big ocean and it's a big oceanography field?

A It takes more than one scientist and we have to coordinate their efforts to get at answers.

Q All right. Now having entered the oceanography field what particular scientific discipline do you contribute toward this multiplicity of different interests?

A Specifically, the analyses of the geochemical analyses of the sediments.

Q Geochemical analyses. All right.

A The heavy metal analyses; if I don't do many of them I at least handle the program in that respect.

THE COURT: All right.

CROSS-EXAMINATION

BY MR. BUTZEL:

Q Dr. Smith, prior to the work that you did here had you studied sediment transport in Long Island Sound?

A No.

Q Could you explain to me the relationship between yourself and a gentleman named Ridley who forwarded the December, 1973 report and seemed to be involved to some extent in the development of this report?

A Yes. Mr. Ridley is presently the Acting Director of the Ocean Science Department. At that time he may have been head of the Physical Oceanography Division. There was a period there when he moved into the Acting Head's position.

So he is my supervisor.

Q And did he have any role in the study or was it left to you?

A Essentially, no. He was administrative and he was kept informed of things that were going on and things that were about to take place, and where there were decisions that were in the administrative realm he made them, usually.

But in terms of the scientific area, he sought the advice of the people who were working in the office.

Q And you then were the principal person in charge of this project?

A No. It was a team effort. I was in charge of different parts of it at different times.

I was mostly in charge of the marine chemistry, the analysis of the sediment in the water.

Leo Fisher was in charge of the physical oceanography in terms of the bathymetry.

Q That would include the sediment transport?

A No. The bathymetry and the currents.

Q Leo Fisher was in charge of that, is that what you said?

A Of the bathymetry and the currents.

Q And your role was principally that of chemically analyzing the sediments?

A Yes, and directing that area of the report.

Q And have you had prior experience with sediment transport elsewhere outside of Long Island Sound?

A All through my college career, which lasted about ten years.

Q Through your college career.

Have you made specific studies for the Navy, since you've joined them, of sediment transport?

A No. Only in respect to this report here.

Q Now, you noted, you started by speaking about currents. You made an analysis of currents here or an analysis of currents was made here.

I refer you to Appendix J of Exhibit 6B, which is Volume 2 of the Final Environmental Impact Statement.

A J. Where, please?

Q Pages 10 and 11. Does this indicate that you -- let me strike that and start again.

Did you make analyses of currents only in Phase 1?

A No.

Q At what other times were current measurements taken?

A The two current meters, No. 3 and 4, were in during roughly October and November, which they were not in the site then and just north of the site because dumping was going on. And I think that's in one of these tables.

Q Okay. Now, did you have some problems with your current meters?

A Yes, we had problems with the two current meters in the site to the extent that the intent was to get four or five day records, the longer the better. However, these two, one of them failed to function for some period of time, which was not -- after twenty-four hours, which we were unable to determine. So we have twenty-five hours of current records in the site.

THE COURT: A twenty-five hour lapse or --

THE WITNESS: No. A twenty-five record.

Of the two current meters, the first twenty-five hours were used.

Q (By Mr. Butzel) That is the total, then, of the current data upon which you reached your conclusions as to the currents at this site, is that correct?

A That's not correct. We reached our conclusions on the currents in the site on the basis of historical data: Cooke, Cross and Bumpus, and Riley; and on the basis of the current meters installed just outside of the site, which did function for four or five days; and on the basis of the two current meters in the site which represent twenty-five hours.

Q You took your data, you used as your data upon which you relied the initial twenty-five hours, is that correct?

A Yes. It covered two tidal cycles.

Q Two, and that's it.

Now, you referred to data by Riley and Bumpus. What

is that data?

A Well, it is in the record here. Do you want me to read it? And it's dated 1972, Gross and Bumpus.

What I'm saying is not specifically me, but Leo Fisher who did the current studies looked into documents which related to currents in this area, published documents by a reputable scientist, to see what the historical data said about current speeds in Long Island Sound.

Q What did the data from Bumpus and Riley, et al say about current speeds at the New London Dump Site?

A Well, I can only refer to what is quoted or written in this report, in that respect. It talks about near bottom - further investigation of residual near bottom drift on Long Island Sound.

Q And it talks about westward drift down below was observed during all seasons, with a maximum drift rate of 2.8 kilometers per day during the spring.

Is that what you're referring to, that data?

A I'm referring to the area which you are addressing. However, I'm referring to drift and that's what they're talking about.

Q None of that data relates specifically, anyway --

A They're talking about a net thing in Long Island Sound.

Q Generally?

A Yes. There are no specific measurements in the site in Dumpus and Riley.

But Long Island Sound has been spoken of as this whole area, and it's all pretty much the same and everything that happens in Long Island Sound happens in this dump site.

Q I see.

A I'm not too sure that that's true.

Q Do you know what the currents are through the Race, for example?

A The speed of them?

Q Yes.

A No, I don't.

Q But you think everything's the same in Long Island Sound?

A No. I know that the main current effect in this area of the dump site is tidal.

THE COURT: Is what, tidal?

THE WITNESS: Tidal.

Q (By Mr. Butzel) As distinct from?

A As distinct from an actual current, prevailing current.

BY THE COURT:

Q Well, how much of a rise and fall in tide is there out there?

A I don't know.

Q Well, it varies quite a bit, doesn't it?

A True.

Q Different places?

A It varies with the phase of the moon too, yes.

Q I understand that. But I mean you don't get much at Nantucket; you get about 10, 11 feet up on Cape Cod.

A It certainly varies, yes.

Q But when you say it's tidal you are giving quite a range of current speed that might be attributed just to tidal influence?

A This is as opposed to a current like an ocean current or a prevailing current. So it's just that the main effect is from in terms of currents in this area.

Q If you wash something away as the tide goes out it will probably wash it back when the tide comes in. Is that what you're saying?

A To a degree, yes.

BY MR. BUTZEL:

Q I think you recognized the net drift here to the northwest, is that correct, in your studies?

A That's right. And I think this net drift is based on bottom drifters, which I am not familiar with. But bottom drifters are not dredge spoil material; quite unlike it.

Q Well, bottom drifters are intended to reflect the currents at least, are they not? Isn't that what they are

BY MR. SUTZEL:

used for, to test currents along the bottom?

A You'll have to explain that one a little more. What do you mean "reflect the currents"?

Q Well, I want to refer you to Exhibit 6A, which is Volume 1 of the Final Environmental Impact Statement, at Page 85.

There is a chart that we discussed yesterday with Lieutenant Way from Hollman and Sandberg reflecting various currents in Long Island Sound and Eastern Long Island Sound.

I think I may have a copy of that chart.

A Might I say it's a chart on surface and seabed drifter results.

Q Right. And this is Page 85, your Honor.

The chart on the bottom right is a chart reflecting bottom currents, is it not?

A I would prefer to say it's a chart reflecting the net drift, the net direction of transport of these drifters.

Q All right. I'll accept that.

And that chart reflects a net drift in Long Island Sound, and in particular in Fisher's Island Sound there, where the dump site is to the west, does it not?

This is Fisher's Island, this is the dump site. I'm referring to Chart 1, Exhibit 1.

A And where is that on here?

Q Right there (indicating).

A I see.

THE COURT: Which one is 1?

MR. BUTZEL: Your Honor, it is the lower right diagram on that page.

Exhibit 1 I was referring to the large chart here.

THE COURT: I see.

Q Is that not correct? It reflects a westward drift through Fisher's Island Sound and then into the Connecticut shore is what those studies show?

A That's what this diagram shows.

THE COURT: What? What did you say?

THE WITNESS: That's what that diagram is showing.

It also shows other directions of drift, too.

Q (By Mr. Butzel) But in terms of the drift that's passing across the area of the dump site, just so we can clarify it, the drift is to the west, is it not, Dr. Smith, and thence along the Connecticut Coast?

A The scale of that diagram does not allow me to say that that drift pattern goes directly over the dump site. It may, but I can't say on the basis of that.

Q In the general area, in any event?

A It's in the area, yes.

Q Now, you referred to a hurricane, Hurricane Agnes,

I believe, which had an impact or at least moved up the Coast in June of 1972, is that correct?

A Yes, that's correct.

Q And that hurricane -- let me withdraw that.

You were doing Phase 1 testing from what period, Dr. Smith?

A In June. I can't remember the exact days. I don't know whether they are in this report or not.

But we were up here, it must have been -- I'll guess it's around the 20th to the 22nd, because the hurricane was off the mouth of the Chesapeake Bay on the 22nd and we were up here in the labs and they were closing down the buildings and telling us to come in and quit, and so forth like that.

Q And I think you indicated, did you not, that while there was a significant amount of rain during that period there was not a significant amount of wind, is that correct?

A This is based on conversations with my co-workers, yes.

Q So that the type of turbulence to which Dr. Bohlen was addressing himself and the wind currents, wind-induced currents that he was talking about this morning would not have been expected to occur during that period, would they?

A On the basis of what we've said, no.

Q As a matter of fact, in the twenty-five hours of

data record that you have for this period June 20th to June 22nd, do you know what day that covers?

A No. That's a point, the actual day of installation of the meter and taking the meter out, I had expected to know today, but I don't know that. And I don't think it's June 20th to June 22nd.

MR. BUTZEL: Thank you.

MR. COHN: Are you finished?

MR. BUTZEL: No, I'm not finished.

Q Now I would like to discuss the question of scouring of grease and oil briefly, if we can, sir.

Would you please turn to Page 60 of Exhibit J in Volume 2 of the environmental report, which is Exhibit 6B in this case. At the bottom of that page you see Paragraph 1, at the bottom of Page 60 there?

A Yes.

Q It talks about scouring of oils, is that correct?

A It talks about scouring of spoil.

Q Right. And was this part then related to oil and grease of the nature that you were referring to earlier this afternoon?

A This section of the report?

Q Yes.

A Related to oil and grease analyses? Yes.

Q To the scouring question.

I thought you indicated in response to Mr. Cohn's question that a conclusion that there had been scouring at the site you didn't think was scientifically valid and I thought you referred to oil and grease levels. Am I correct on that?

A Yes.

Q All right. Is this one part of that section?

A Yes.

Q That's what you're talking about.

Now this was published in May of 1973, is that correct; Exhibit J?

I think I can speed your task just by showing you the cover page.

A That's what I'm looking for.

Yes.

Q Now, in the December study that same conclusion was left in there, is that not correct?

A No.

Q All right. What was in the December study?

A To the best of my knowledge, it was just deleted.

Q Well, would you read for me Page 96.

A To the best of my knowledge, I say.

Page 96, now what is this of?

Q This is what you call the Draft Report, what was referred to by Mr. Ridley as a Final Report, subject to changes

only to make corrections on statistical analyses, and his covering letter was dated December 14th, 1973.

And I will give you a copy of the Court's document, Page 96. Would you indicate to me what that says?

THE COURT: Now you are with reference to Exhibit what?

MR. BUTZEL: Exhibit 12.

THE COURT: Does that have a number?

MR. BUTZEL: Exhibit 12 is an independent exhibit, your Honor, of which we have too few copies, I'm sorry to say.

THE COURT: Is that a monitoring report?

MR. BUTZEL: I'll show it to your Honor.

This is the report that was developed after the Impact Statement was put together.

THE COURT: December, '73?

MR. BUTZEL: That is correct.

THE COURT: Okay.

Q (By Mr. Butzel) Could you read that section?

A Yes, okay. It talks about scouring. It says: "The results of oil and grease reflect the dominance of tides and storms on the levels of contaminations present in dredge spoil. Although deposited spoil was evidently removed from the site by scouring, it is uncertain whether it was carried landward, into central Long Island Sound, or out

to sea."

That statement or anything about scouring in the oil and grease section is not in the report that we finally published.

Q Yes. But it was in May and then it was still in in December, wasn't it?

A It was in May and, yes, it was still in in December.

Q But you didn't feel it was necessary to change it between May and December, is that correct?

A Didn't pick it up, didn't have the time to see it, to spot it.

That report has been gone over thoroughly since and it is not going to be in the published report.

Q When Mr. Ridley sent this out and described it as: This is the same as the Final is going to be, with the exception that it says: "The Student's 't' test for significance will be replaced by a more reliable statistical analysis", did he check with you or did he check with Mrs. Fisher or Mr. Fisher?

A Mr. Fisher.

Q Mr. Fisher.

A To the best of his knowledge, that's what he thought.

We were working on other projects and when we get a chance no scientist wants to go out, anything to go out until it has been thoroughly reviewed. This had to go out. The de-

mand for this and the Mayport report was extremely high. They wanted something.

So to the best of the knowledge, of my knowledge on the spot, I told Ridley as to my part what I thought was missing.

I did not tell Mr. Ridley that everything in here is exactly right and exactly so as it is going to be ultimately when we publish the thing.

Q Will you just explain to me just briefly again, did you eliminate this section on the basis that you didn't think it could statistically be sustained?

THE COURT: "Scientifically", I thought he said.

A Scientifically. I asked Mr. Dallaplane, who wrote it, I don't see how you can support this, Hal, scientifically. You're talking about transport and scouring and erosion on the basis of oil and grease variables which have greater variance between samples than between your control station and that so-called trough or depression.

Q It doesn't show that it didn't occur; you're just saying that the data there wasn't sufficient to substantiate that it did occur, is that what you're saying?

A I'm saying that he could not say scouring had taken place on the basis of that.

Q And this was done when?

THE COURT: Let me see if I get this straight.

BY THE COURT:

Q The variations between samples from one station and another in oil content -- right?

A Oil and grease.

Q -- oil and grease was not greater than variations in the oil and grease contents of samples taken from the same place, is that right?

A Well, it was in some cases greater such that --

Q All right. Taken from the same place there might be greater variations than those taken from another place.

A Yes. You're not always sure.

Q All right. Now, suppose you get a variation in those of 10 points. Is that a way of measuring?

And the samples are taken from one place, and you get a variation of 10 points among the samples taken from another place. But the variations of the samples taken from the first place is between 70 and 80, and from the second place is between 100 and 110. So there are different concentrations in different places?

A That's right.

Q That's right. But what you're saying, if I understand you correctly, is in this case the concentrations were the same in the different places and the variations in one place was just as great as the variation between that place and the other place?

A Essentially. Sample to sample variation, if I understand you --

Q Oh, I'm trying to understand you.

A -- is greater. If you take the example --

Q I mean if you didn't know where these samples came from and then you say I'm going to take samples now from this one place, someone else wouldn't know whether they all come from the same place?

A They might not, that's right.

Q They couldn't tell from the variations. That's what you're saying?

A Right. Unless he had some other data, right, that he knew.

Q Yes.

A Right.

Q But from what he was using that's all he had.

A Yes. He's comparing a control station, one station, and we know that this goes a little bit further; that the dredge spoil material does not go down there and spread out evenly. We know this from other studies.

Q That's another point.

A You might hit it and you might miss it.

So in any geochemical sampling - and this seems to apply to oil and grease analyses too - it is not uncommon to have large sample to sample variations.

So just because he got two samples in this depression that are similar in their parts per million value, roughly six or seven hundred, as those from one station up north here, does not support scouring. The assumption is up north here there has been nothing dumped there, there's no dredge material here, and it's just like down here.

Q That means that this must be scoured out because nothing was up there.

A That is weak. Well, you've got to prove nothing is up there, first. That is extremely weak evidence for scouring.

THE COURT: All right.

BY MR. BUTZEL:

Q But it could be explained that way, couldn't it?

THE COURT: Well, what I'm trying to get at is why, as scientists, they felt it was necessary to knock this out.

He still might be right, but there isn't proof, is there?

THE WITNESS: Absolutely not.

THE COURT: Okay.

Q Could you tell me when this change was made, by the way, in the language of the draft?

A Roughly, I think about three months ago. Now, this is a rough estimate. Two to three months ago we finished

going over this document such that we felt it was in the form that we would put it in to have it published by the Office, which takes on an unknown amount of time.

So we have dug it out now and then, but we had several sessions over the course --

THE COURT: Back around June or July?

THE WITNESS: Yes, to the best of my recollection.

Q Now, are there any other changes in the report from the draft?

A Not that I am aware of.

I mean that specific statement, when it was pointed out, I couldn't find in the Final Draft that we have. But, for instance, in some of the things that you had here -- well, okay, you just now got this December report, but prior to this I think you only had tables from Phase 3.

Q That's correct.

A You didn't have interpretation or written essay-type thing, discussion.

Q But there have been, as far as you are aware, no other changes from Exhibit 12, other than the one you just mentioned?

A Yes, I must say there might be some additional biological information that has been added. For instance, that to which I testified earlier is a result of studies that

have been going on on these New London samples since we finished this project by our biologists.

Q Is that the limit of it?

A So to the best of my knowledge, yes, there's nothing, you know, major. It's an editorial type thing.

THE COURT: These were anthropods, these bottom dwellers?

THE WITNESS: Amphipods.

THE COURT: What is that? Give me a for instance.

THE WITNESS: Crustaceans.

THE COURT: Crabs?

THE WITNESS: Well, it's in the same family, except there they leave worm tubes. I'm not a biologist, but I know this much about them. And they are good biological indicators of these and the communities that exist there now, according to our biologists, are not unlike those ampeliscad, which is a species, are not unlike those amphipod communities which exist according to many and from the literature elsewhere in the Sound. They are prolific right now.

Q (By Mr. Butzel) I would like to refer to a couple of parts of your Exhibit J, starting first at Page 14.

THE COURT: Are we going to be much longer?

MR. BUTZEL: Ten or fifteen minutes, your Honor.

Would you like to take a recess or should we take a recess at this point?

THE COURT: I would also like to take a few readings of my own.

Would this be a convenient witness with whom to suspend?

MR. COHN: Your Honor, we have a few other witnesses - maybe one other lengthy one, Mr. Conley - which we will have to put over till the 20th.

THE COURT: Till the next time we meet.

MR. COHN: That's right.

We have two witnesses from the Navy on the damages aspect.

THE COURT: On the what?

MR. COHN: We have Admiral White here and Commander Clearwater on the actual timing aspects of the project.

THE COURT: We are going to take a recess.

MR. COHN: They won't take more than a half hour together.

(Short recess.)

BY MR. BUTZEL:

Q Dr. Smith, on Page 12 of Appendix J, Exhibit 63 in this case, under Paragraph 4, "Summary", where you are talking about currents and resuspended sediments, the last sentence reads:

"These conclusions are based on relative short data records and may not represent the conditions occurring over a long period of time."

That statement has not been changed, right?

A To the best of my knowledge. I would have to go look at a scratch copy I have. I don't think it has been changed, no.

THE COURT: What are you referring to?

A In any event, it's true.

THE COURT: What statement?

MR. BUTZEL: The statement, your Honor, at the bottom of Page 12, Exhibit J. It reads:

"The current speeds and directions measured during these investigations indicate that any resuspended sediments probably would remain in the general vicinity of the disposal site. These conclusions are based on relatively short data records and may not represent the conditions occurring over a long period of time."

Q And you said that's correct?

A Yes. And they may.

What you are saying is we need --

Q I think you've answered the question.

If you want to qualify more, go ahead.

A They are current meter records from the disposal site in question now. I think that's important. Twenty-five hours have been recorded.

The reason longer records aren't recorded for there are because we couldn't corelate them with time and direction on a magnetic tape because of --

Q Because your current meter broke down, is that not correct?

A Because the current meter stopped running for a period of time. But the first twenty-five hours are valid data. And they are --

Q That represents what, one day, two tidal cycles?

A Two tidal cycles, twenty-five hours; yes, a day and an hour.

BY THE COURT:

Q You've got these 30.3 centimeters per second. How many miles an hour is that?

A Well, let's see, I could make a rough estimate. One knot per hour is roughly a hundred centimeters per second, I think.

Q So 30.8 centimeters per second is about a third of

a mile per hour?

A Roughly, I think that's right.

Q Well, that's a pretty minimal kind of a current, isn't it?

A Well, in terms of eroding sediments of the size that we're talking about, of the material that is being put in there, you would have to have --

Q That's about as gentle as you get in a bathtub, isn't it?

A Well, you would have to have to erode natural non-cohesive sediments in the order of 20 to 50 centimeters per second to entrain sediment particles of the silt and clay size.

The smaller the more difficult they are to pick up, once in suspension you can take lesser velocities to keep them there. But you would have to have currents to entrain 20 to 50 centimeters per second to entrain natural sediments. These and the spoil material would require even more.

Q Well, you are within that range here when you've got 30 to 38 centimeters per second.

A That's maximum. The average is equally important here.

The average is ranging from 3 to 4½. You are within that range for eroding natural sediments and such sediments will come out the river, and sediments like that in

the Sound will be shifting around also, by the same token.

As a matter of fact, if they are shifting around and are shifting over the site, if they are, they will be eroded, they will be on top of spoil and they will be eroded first.

BY MR. BUTZEL:

Q And these currents you measured first are in non-storm weather, right?

A Yes.

Q And non-turbulent weather?

A Well, I'm afraid I can't answer that one because I'm not too sure what turbulent weather is.

Q Well, what was the turbulence in this area, what were the winds --

Let me ask you this: Do you agree with Dr. Bohlen that winds and resulting turbulence are an important factor in sediment transport and in the nature of just in sediment transport?

A Yes, I agree generally with his statement that winds are a factor.

Once winds commence and start acting over a body of water, the effect on the bottom is not immediate. The winds must reach the bottom through the water column, and this is not an immediate thing.

And for any substantial transport, of course, it's

reasonable to assume that this turbulence, if you like, would have to be maintained for some time.

Q You say winds, then, require some time to affect the turbulence to reach the bottom. Then I assume you would also agree with Dr. Bohlen's criteria that depth is an important factor in picking a spoil disposal site for containment?

A Generally, yes.

Q How deep is this site, Dr. Smith?

A Well, from my knowledge of the bathymetry charts, I think it's in the range of probably an average of 80 feet, or something like that.

Q It's an average of 80 feet?

A Well, maybe it's not an average. Maybe it ranges from different parts in 40 to a hundred.

Q Well, why don't we look at the charts while we have it right there.

A Good idea.

THE COURT: The chart says a hundred eighty.

MR. ZUTZEL: Now we are looking at X, your Honor. We are talking about this one right here.

THE COURT: Yes; 65 to 70.

Q We've got readings. What do we show readings of here?

A 65, 70, 72, 36 as we pointed out, 64.

Q 57?

A Yes.

And our bathymetry chart show readings of 70, 75, I think.

Q All right, Dr. Smith. Let me ask you one further question.

Where, in the report, is it suggested that the 36 foot area of the site may have resulted from prior spoiling?

A I don't believe it is suggested in the report. I did testify to that as an opinion.

Q Yes. But what is the basis? Did you make any tests of that area to determine if it was prior spoil?

A Not specifically to get at that end. I'm not too sure how you do that, anyway.

Q And I think --

A Anybody.

Q -- your response to one of the Judge's questions you indicated that you hadn't checked with the Corps of Engineers as to their records on dumping at that particular location?

A We went a little bit further than that. We have made several formal inquiries during our study as to, gee, we knew it was a previous dump site. That was common knowledge. Wonder how much they've been dumping in there.

And we've talked to people informally and found out that they've been dumping in there for several years.

Q How much did they dump in there, sir? Do you know?

A I don't know.

Q This site is a mile square, is it not?

A That's what I understand.

Q Do you have any indication that they dumped most of the spoil at the area that's now 36 feet?

A Do I have any indication that they dumped most of the spoil?

Q Or any of the spoil at that particular point?

A I have an indication that they dumped spoil in this one square mile area.

Q But not at the point that turned out to be 36 feet deep in depth only, do you?

A Specifically, no.

Q And do you have any indication --

A But that's part of the site.

Q Yes, that is part of the site. And part of the site also is an area that's 70 feet deep, isn't it, Dr. Smith?

A Yes.

Q And do you have any indication whether they dumped spoil at that site, at the 70 foot depth? Do you have any indication whether --

THE COURT: Well, he said he doesn't know.

THE WITNESS: Yes.

THE COURT: He didn't take any tests of what's

down there.

Is that right?

THE WITNESS: I don't -- we sampled what's down there during Phase 1 to compare with Phase 2 and Phase 3. So we know the nature of the material.

As to say whether this is spoil material that was dumped at a specific time from the Thames River, no one could say that.

Q (By Mr. Butzel) Thank you. The last question is did you, in any of your studies, any of this study, test for possible uptake of pollutants by the benthic organisms, by the bottom organisms that inhabit the dump site or surround the dump site?

A It's in progress now.

Q But that is not part of this report, is that correct?

A That is right.

MR. BUTZEL: Thank you very much.

MR. COHN: We have a stipulation, your Honor, as to another witness. It involves more than the other witness, in order to arrive at a stipulation.

We agreed to make several --

THE COURT: Are we through with Mr. Smith?

MR. COHN: Yes.

(Witness excused.)

* * * * *

E D W A R D C O N L E Y,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you state your full name for the record.

THE WITNESS: Edward Conley, C-o-n-l-e-y.

THE CLERK: Where do you live, Mr. Conley?

THE WITNESS: 66 Burgess Avenue, Westwood, Massachusetts.

THE COURT: Westwood?

THE WITNESS: Westwood.

THE COURT: Where is that?

THE WITNESS: It's just south of Boston, between Dedham and Norwood, your Honor.

MR. COHN: Your Honor, we are attempting to stipulate to documents so we don't hold things up here.

BY THE COURT:

Q What is your business or occupation, Mr. Conley?

A I am Chief of the Permits Branch of the Environmental Protection Agency in Region 1.

Q Permits Branch of the Environmental Agency?

A Yes, sir; EPA, the Environmental Protection Agency.

Q In District 1?

A Region 1.

Q And you don't know on what basis they may have

Q And Region 1 embraces what area?

A The six New England states.

Q How long have you had that job?

A About five years now.

Q Does that call for any particular professional qualifications?

A It's a technical job. I am an engineer in background, but it's a very much administrative job, too.

Q What is your engineering background?

A In civil engineering.

Q Civil engineering. Licensed somewhere?

A No, sir.

Q Graduate of some school?

A Yes, Northeastern, with graduate work at Northeastern.

Q Northeastern University?

A Yes, sir.

MR. COHN: Your Honor, we have agreed to admit these papers as Defendants' Exhibit E. They are correspondence between the Corps of Engineers and Mr. Conley.

I think he can identify the nature of the correspondence and so forth.

(Defendants' Exhibit E: Correspondence between Conley and Corps of Engineers, marked full

exhibit.)

THE COURT: The nature, it has to do with a permit from EPA?

MR. COHN: Yes, your Honor.

At the time when the Corps of Engineers made the determination that the New London Site would be the site that they would select, they wrote to the EPA, which is required by statute, Section 404 of the Water Pollution Amendments, and this is the back and forth correspondence.

Mr. Conley actually wrote these memos in large measure and they were signed by his superior, the Director of the Region, Environmental Protection Agency.

THE COURT: My question was does it relate to the request for an issuance of the permit from EPA?

MR. COHN: Well, EPA, your Honor, does not have to give a permit, but has a veto power on whether the Corps can issue the permit. And that's what they did, in essence.

THE COURT: I see.

DIRECT EXAMINATION

BY MR. COHN:

Q I believe that's correct, is it not, Mr. Conley?

A We can deny or restrict use of a dumping site.

Q But you can't issue a permit?

A No, there's no permit.

Q It is up to the Corps to request you to review the permit?

A That's right. And review the disposal site.

THE COURT: Well, it must be submitted to your Branch for approval?

THE WITNESS: Yes, sir.

THE COURT: Before being issued by the Corps of Engineers, is that right?

THE WITNESS: It's not approval so much as it would be a denial or a restriction on our part.

In other words, they submit the proposed dump site and what they propose to put into it to us.

THE COURT: All right. Subject to veto or restraint by you?

THE WITNESS: Right.

Q (By Mr. Cohn) What do you do, if I may just inquire of the procedure, if you choose to restrict or, say, limit or even stop a project? What, under your regulations, do you have to do?

A We would have to determine that there would be an unacceptable adverse effect of the disposal of this particular dredge spoil. We would have to be able to prove that it would be an unacceptably adverse effect to the environment.

THE COURT: You would have to what, prove that?

THE WITNESS: Yes, sir.

THE COURT: So there is a burden put on you?

THE WITNESS: Yes, sir.

THE COURT: And if you sit on your hands then you just don't do anything with respect to disapproving, just then we don't know anything about it. That would be a simple way of doing your job, wouldn't it?

THE WITNESS: I suppose. We don't do it that way. We do look into them.

MR. COHN: May I use the exhibit, your Honor?

THE COURT: Of course.

MR. COHN: Thank you.

Q (By Mr. Cohn) Now, did, in fact, the Corps write to you or to your supervisor?

A Yes, sir.

Q And they requested that a certain site be selected -- reviewed by you for selection?

A Yes, sir.

Q And did you respond to them?

A We did, sir.

Q Showing you this letter dated April 9th, is that the letter in which you responded?

A Yes, sir.

Q Now, could you read this paragraph and the conditions?

Read the paragraph. Then you can summarize the conditions.

THE COURT: What is April 9th, a response from EPA or a request from the Corps?

MR. COHN: No.

Q The request was made when?

THE COURT: Is it a response?

MR. COHN: Yes. The April 9th letter is a response.

THE COURT: All right.

MR. COHN: We will get the date of the request.

Q What is the date of the initial --

A The initial correspondence began on the 27th of September, 1973; but the official request from the Corps to us to review this particular site was 27 March, 1974.

Q March of '74 they wrote to you. And then the date, again, was April 9th?

A Our reply was April 9th.

Q And just read that paragraph. Then we will ask you about the conditions.

A "We are currently unable to demonstrate any unacceptable adverse impact on these marine resources. We therefore cannot deny site specification. However, to insure

minimum adverse impact to the marine environment and the surrounding amenities, we request the following conditions be included in our site approval".

Q Before going into the conditions, can you tell us something about the background of the first paragraph and the request for certain conditions, and so forth?

A Okay. Under Section 404 of the Water Pollution Control Act the Corps --

THE COURT: Wait a minute.

Section 404?

THE WITNESS: Yes, sir.

Q Section 404(c), isn't that correct?

I don't expect you to know that, but I believe it is 404(c) of the Water Pollution Control Act.

A I don't remember.

MR. COHN: I think that's 33.

THE COURT: 33?

MR. COHN: U.S. Code 1344(c). "It is also known as Section 404(c) of the Pollution Control Amendments of 1972.

Q Now, can you go on with what your job is under that?

A And that Section authorizes the Environmental Protection Agency to deny or restrict the use of any defined area for the disposal of dredge material, if we determine after public notice and an opportunity for a public hearing that

the discharge of this material will have an unacceptable adverse impact on either municipal water supplies, fish spawning grounds, wild life or recreational areas.

Q You would have to have a public hearing and notice in order --

A You would have to have a notice and an opportunity for a public hearing if someone wanted a public hearing.

Q But you didn't do that in this case?

A No.

Q Why was that?

A Because we couldn't prove that it would have an unacceptable adverse impact.

BY THE COURT:

Q Well, what did you do about not proving?

Of course, you can't prove it if you don't know anything about it. Did you make any sort of inquiry into the problem?

A Yes, sir.

Q Well, how do you go about that?

A Well, when you make inquiry into it we found out in the scientific community very, very little is really known about the long-term effects of dumping dredge material.

So what we did in this particular case was recommend to the Corps that they condition the permit that they issue to the Navy to monitor this thing and should you see any

environmental adverse effect, to either terminate it immediately or to move the dump site.

I can read you the recommendations if you want.

Q That is, your inquiry for the purpose of determining whether or not this would have some adverse impact was directed to knowledge in the scientific world, is that right?

A Yes, sir.

Q Or in the literature bearing upon this problem, is that right?

A Yes, sir.

Q Do you know of any other way that you could find out what goes on when dredged material is dumped out in the ocean?

A No, sir.

BY MR. COHN:

Q Did you, in fact, inquire or have one of your employees inquire of a laboratory that works for you?

A Yes, sir.

Q And who did that?

A Probably Dr. Rosenberg who works with me.

Q I show you this memo of April the 5th and ask if Dr. Rosenberg wrote that memo?

A Yes, sir.

Q And what is the substance of that? Where had he checked?

A Okay. He had discussed this, among others, with Dr. Schneider, who is the Chief of the National Marine Water Quality Laboratory at Narragansett, Rhode Island.

Q Is that an EPA --

A That's an EPA national lab, yes, sir.

Q And what was their feeling?

THE COURT: Is this reflected in the correspondence there?

THE WITNESS: Yes, sir.

MR. COHN: It's Exhibit E.

THE COURT: Exhibit E.

Q And what do you see in that memo that Dr. Schneider indicated?

A Dr. Schneider indicated that if we decided to do the use of any site under Section 404, we must be prepared prove at a public hearing that the disposal at the site wil have an unacceptable adverse effect to wildlife, spawning areas, etc.

Q Did he also decide that that wasn't possible?

A He decided that it was not possible in this case.

Q In other words, you couldn't go the public hearing route because there just wasn't enough hard evidence to show that it would have an adverse effect?

A Yes, sir.

Q All right. Then, in effect, you're saying that y

made your determination under 404 and could not stop or modify the project, is that correct?

A That's correct.

Q However, you did have certain conditions, did you not?

A Yes, sir.

Q How did you view these conditions if you didn't follow 404?

A Well, we couldn't prove that there was an adverse effect --

THE COURT: Well, the conditions are there. So what?

MR. COHN: Your Honor, it would be our contention that they could find no adverse impact of the dumping.

However, they did make certain recommendations. And we want to indicate - I believe the witness will testify - that all but one has been complied with.

Q (By Mr. Cohn) Is that correct?

A Yes, sir.

Q Can you tell us what the five conditions were?

A We recommended to the Corps five conditions to be incorporated in the permit. They were, one, that the disposal operation be conducted as quickly as possible.

Two, that all disposal occur at a point marked by a buoy or similar marker so that a cone-like formation results. And then the buoy should be located at 72,05 West and 41, 16, 03 North.

That the Corps of Engineers find and begin to study an alternate disposal site prior to the commencement of disposal at the New London Site.

That upon completion of all disposal of dredge spoil the spoils are to be covered with five inches of clean fill.

The fifth one: Should an unacceptable adverse impact be detected, the criteria for which are to be set by the Scientific Advisory Subcommittee, the permit shall be summarily suspended or the disposal operation shall be moved to the alternate site.

THE COURT: Should what?

THE WITNESS: Should an unacceptable adverse impact be detected, the criteria for which are to be set by the Scientific Advisory Subcommittee, the permit shall be summarily suspended or the disposal operation shall be moved to the alternate site.

Q And has the Corps of Engineers and the Navy accepted all but one of those?

A Yes, sir.

Q Which one did they not accept?

A They have not incorporated in the permit our recommendation that they cover all of the dredged spoil with five inches of clean material.

Q Did they give you a reason --

THE COURT: You didn't specify what the clean material would be? You don't know?

THE WITNESS: No, sir.

THE COURT: You don't know what they ought to use.

Q Did they give you a reason for not doing that?

A They felt that they weren't sure that it was feasible to do this at this point. And they thought that they would like to study it and evaluate this proposal before they incorporated it as a condition of the permit.

Q It was made part or indicated to the Committee doing the monitoring that this should be considered, is that your understanding?

THE COURT: Well, it wasn't done, anyway.

Q It wasn't done?

A No.

THE COURT: That money wasn't in the budget.

Q Did you receive an indication from the Corps that this would be considered as part of the monitoring project?

A Yes, sir.

Q So although it hasn't been done at this time, it's still a feasible alternative, should the need develop?

A Yes, sir.

MR. COHN: I have no further questions.

CROSS-EXAMINATION

BY MR. BUTZEL:

Q Mr. Conley, I gather from your answers to Mr. Cohn's questions and also to the question the Judge posed to you, that it was the position of EPA that in order to either deny or restrict the use of the New London Dump Site EPA had to be able to prove that there would be an unacceptable adverse impact, is that correct?

A Yes, sir.

Q So that in determining not to veto the selection of the dump site, that did not indicate on the part of EPA, did it, that there were no risks of unacceptable adverse impact?

A No, it did not.

Q And you recognized, did you not, that there were potential long-term impacts that might occur?

A Yes, sir.

Q But you were unable, at least by your reading of the law, to prove that those would occur; is that correct?

A Yes, sir.

Q Now, can you tell me precisely what materials, documentary materials, studies, were considered by your Agency

in reaching the conclusion that they could not show absolutely an unacceptable adverse impact?

A I really can't. There are other people here today who can.

Q There are.

THE COURT: Well, did you consult with somebody?

THE WITNESS: Yes, sir.

THE COURT: Who was that, again?

THE WITNESS: Well, among others, Dr. Rosenberg who works with me, and Dr. Phelps of our National Marine Quality Laboratory.

THE COURT: And where does Rosenberg work?

THE WITNESS: In the Permits Branch, in Region 1.

THE COURT: You went to somebody in Rhode Island?

THE WITNESS: Dr. Phelps, Dr. Schneider, Dr. Pragar - a number of people within EPA have been involved in this project.

BY MR. BUTZEL:

Q And you, yourself, do not know --

A No, sir.

Q -- what materials they had available to them?

A No, sir.

Q And you don't know on what basis they may have reached the conclusion that they couldn't prove an unacceptable adverse impact at this time?

A No, sir.

THE COURT: Did you know of any better source for information?

THE WITNESS: No, sir. We also have discussed this with other agencies: the Bureau of Sport Fisheries and Wildlife, the National Marine Fisheries Service.

THE COURT: Wait a minute.

Bureau of Sport Fisheries?

THE WITNESS: Yes, sir.

THE COURT: Do they know anything about this? I support.

And the Bureau of what?

THE WITNESS: National Marine Fisheries, I think. It's within NOAA.

THE COURT: National Marine Fisheries. And who else? You said something about Wildlife. Did you say wildlife?

THE WITNESS: I think we discussed it with the Bureau of Sport Fisheries and Wildlife.

THE COURT: Is that one agency?

THE WITNESS: Yes, sir.

Q (By Mr. Butzel) Do you know what their opinions were, Mr. Conley?

A Their opinions, the other agencies?

Q Yes, the other agencies that you discussed this with.

A To the best of my knowledge -- no, I really can't answer that.

Q Isn't it the case that everyone was concerned about this, but no one was able to say definitively that these impacts would occur?

A Everyone is concerned, yes.

Q Yes. Did you ever consider calling a public hearing to see whether more information could be developed on it?

A No, sir.

Q You referred to Dr. Schneider at one point and you also referred to the monitoring program. Are you familiar with the monitoring program, itself?

A I have seen it, yes.

Q Could you tell me whether that monitoring program is designed in any way to measure long-term impacts?

A I couldn't answer that, sir.

Q You don't know.

And did your Agency or did you consider the possibility that the spoils might be dumped at this site and not move for a considerable period of time, but then perhaps move a year or a year and a half later, as Dr. Bohlen described

last week when I think you were here?

A Did I consider?

Q Yes.

A No, sir. But -- no.

Q Let me ask you about the conditions that -- well, let me just refer you to the monitoring program.

You are aware, are you not, sir, that the monitoring to be undertaken in connection with the monitoring program defines the dump site in the area in which materials have to be contained as a site with a radius of one mile? Are you aware of that?

A Yes, sir.

Q So that would be a total area of 3.14 square miles, is that correct?

A Yes, sir.

Q I want to show you a letter dated May 28, 1974 from Mr. Schneider to Dr. Pearce.

MR. BUTZEL: I think I would like to have this marked as an exhibit.

MR. COHN: I don't know if I've seen it. Perhaps I could see it.

Yes.

MR. BUTZEL: Your Honor, could we have this marked and introduced as Plaintiffs' Exhibit 19?

THE COURT: All right.

MR. BUTZEL: It is a letter to Dr. Jack Pearce from Eric Schneider of the United States Environmental Protection Agency. It is dated May 23th, 1974.

(Plaintiff Exhibit 19: Letter dated 5/23/74 from Schneider to Pearce, marked full exhibit.)

BY MR. BUTZEL:

Q Mr. Conley, Dr. Schneider there takes note of the area in which dumping should be allowed in the last paragraph. And I wonder if you would just read the first three sentences or so of that paragraph?

A Okay. "For administrative purposes, the Army Corps of Engineers should minimize the boundaries of the dump site or region in which they are willing to compromise the environment. This entire monitoring program is useless if an infinitely large dump site is permitted. I would suggest a half square mile area from a center marked buoy and changes in the above indicators would be indications of appreciable harm outside the site."

THE COURT: This is Dr. Schneider to Pearce?

THE WITNESS: Yes, sir.

THE COURT: Is Schneider here?

THE WITNESS: No, sir.

THE COURT: Is he a sailor?

MR. BUTZEL: Dr. Schneider, your Honor, is one

of the scientists at the Narragansett laboratory to whom Mr. Conley referred earlier.

THE COURT: Yes, all right.

Q (By Mr. Butzel) The question is is he a sailor?

A No, sir.

Q So Dr. Schneider recommended a half a square mile as the limits of the dump site, didn't he?

THE COURT: Is there really anything significant about whether it's a half or a mile and a half?

MR. BUTZEL: I think that if you look at this letter, your Honor -- do you have a copy of the exhibit in front of you?

THE COURT: No, no. I'm asking you.

MR. BUTZEL: Yes, all right. There is a significance --

THE COURT: I mean how big is this ocean over here, this area?

MR. BUTZEL: What we're talking about here, your Honor, is the validity of the monitoring program. And what Dr. Schneider is pointing out is if you use a very large area and set up your monitoring stations at the edge of a very large area you're not going to have any meaningful monitoring program.

If, on the other hand, you use a small area,

then it may be meaningful.

THE COURT: All right.

Q (By Mr. Butzel) Is that a correct interpretation, Mr. Conlay?

A Yes.

Q And he recommended a half a square mile. And, in fact, it has become 3.14 square miles, is that correct?

A Yes, sir.

Q Did you ever check back with him about that?

A I did not, no.

Q Now, I would like to refer you to the letter of April 9th. Do you have a copy of that in front of you?

A Yes, sir.

MR. BUTZEL: Your Honor, this is part of Mr. Cohn's exhibit. I thought I could provide you with a copy so you can follow along.

THE COURT: Thank you.

This is part of Exhibit E, right?

Q Referring to the second page of this letter, your recommendation that the Corps of Engineers find and begin to study an alternative disposal site prior to the commencement of disposal at the New London Site, you indicated that that condition has been fulfilled.

Could you indicate what the alternative site is that has been found?

A There are two sites, as I remember now. I would have to go back and ask someone back there. But the two sites south of Fisher's Island.

Q I think that they are probably the sites referred to as B-1 and B-2 --

A Yes.

Q -- on what is Exhibit 1 in this case, the chart?

A Yes, sir.

Q All right. Do you know what studies have been undertaken at that site up to now?

A Up till now?

Q Yes.

A Only in a very cursory way. I really don't know the details.

Q Well, in cursory fashion, what has been done to study that site?

A As far as I know, I think they have begun to study the currents in the area.

THE COURT: The what?

THE WITNESS: The currents.

THE COURT: Currents?

THE WITNESS: Currents.

Q (By Mr. Battel) And that's all, as far as you know, that they've begun?

A As far as I know. I don't really know. The Corps is

dredging spoils, there are problems that may develop locally.

handling it.

Q Now you - when I say "you", the Environmental Protection Agency has developed criteria, has it not, to be applied in cases of disposal of polluted materials such as we have here, is that correct?

A True. Yes, sir.

Q I refer you to the second volume of the Final Environmental Impact Statement, that's Exhibit 63 in this case, and to what is Exhibit M at the end of that - an excerpt from the Federal Register: Environmental Protection Agency, Ocean Dumping, Final Regulations and Criteria.

Those are your regulations and criteria for selecting disposal sites, is that correct?

A That's correct, sir.

THE COURT: Exhibit N?

THE WITNESS: It's Exhibit M. It's the EPA criteria from the Federal Register.

Q Now, Mr. Conley, in this Exhibit M I want to refer you specifically to Section 227.64, which is on Page 28620 of the Federal Register, anyway.

Do you see that section there, "Disposal of Polluted Dredged Materials"?

A Yes, sir.

Q And we are dealing with polluted dredged materials in this case, are we not?

A Yes, sir.

Q All right. Now, the criteria for that states under Paragraph (a), "Disposal site selection. Disposal sites should be areas where benthic life which might be damaged by the dumping is minimal".

And then Subparagraph (2), "The disposal site must be located such that disposal operations will cause no unacceptable adverse effects to known nursery or productive fishing areas".

Then this is the sentence I want to direct your attention to: "Where prevailing currents exist, the currents should be such that any suspended or dissolved matter would not be carried in to known nursery or productive fishing areas or populated or protected shoreline areas."

Now, sir, you are aware that the New London Dumping Ground is approximately two miles away from the Connecticut Coast, are you not?

A Yes, sir.

Q Are you also aware, as is stated in the Navy's own studies, that the residual drift of the current is to the northwest?

A Yes, sir.

Q And that would take the currents into known nursery areas, would it not, along the Connecticut Coast?

A It would take it into the Connecticut Coast, yes sir.

Q And do you know if those areas constitute nursery areas?

A Well, all the estuarine areas would be nursery areas.

Q Did you attempt to measure or determine whether those net drift northwest currents would carry either suspended or dissolved material into those nursery areas?

A I don't know whether our scientific people did attempt to do this in their evaluation of the project. I myself can't -- I really don't know.

Q Were you aware of these criteria of the current at the time that you concluded that you couldn't prove there would be no adverse effects?

A Yes, we probably were, because it was in the Environmental Impact Statement. I would imagine that the people that reviewed this did.

Q And I think Mr. Cohn said you were responsible for these letters?

A Yes, sir.

Q But you didn't check to determine how these criteria specifically might relate to this site?

A I'm not sure I understand the question.

Q Well, I'm not sure the question is very clear, quite honestly.

Basically, I think you've answered the question already. You didn't have any knowledge yourself as to whether

objections this would have been amended and there would have these currents would, in fact, or not, in fact, carry suspended or dissolved material into the nursery areas that we've identified?

A No.

Q And you don't know what your scientists may have considered in that regard?

A No.

Q Now, Mr. Conley, one final series of questions.

There is no reason why the dump site which is now located at New London could not be located outside of Long Island Sound, is there?

A No. Another dump site could be selected.

Q And it could be outside of Long Island Sound?

A Yes, sir.

Q When you wrote your comments on the Revised Draft Impact Statement referring to the New Marine Sanctuaries and Ocean Protection Act, or whatever it is called, you didn't mean to suggest by that, did you, sir, that the Navy had to consider a site or select a site in Long Island Sound?

A No, sir.

Q In fact, the dumping could take place, could it not, at these two sites that we identified earlier?

A If these preliminary studies indicate that they had been suitable sites, yes.

Q And it could take place at a site that's been known

as the Acid Site?

THE COURT: Well, anything could happen, Counselor. I don't see the point of this.

MR. BUTZEL: I got the impression, your Honor, from some of the things that Lieutenant Nay had said that there was some kind of legal impediment to disposal outside of the Sound that EPA --

THE COURT: Some international law requirement, right?

MR. BUTZEL: I thought that the Impact Statement had referenced it to this Marine Sanctuaries Act.

Q And I was just trying to clarify that there's nothing in the law that forecloses the use of these sites, is there, Mr. Conley?

A No.

THE COURT: All right.

Q Let me ask you one final question. EPA did submit comments on the Revised Draft Impact Statement that the Navy filed here.

It didn't, however, did it, submit comments once the Addendum to that Revised Draft Impact Statement was issued?

A Not to my knowledge, no, we didn't comment.

Q Do you know why it didn't issue comments on that?

A I really can't answer why we didn't do it, but I

think part of it was the feeling that we could try to effect any comments we might add to this through our conditioning of the permit.

Q But at that time, I mean that was in the fall of 1973. Had you assumed by that time that the permit was going to be issued?

A I hadn't assumed, no, that it would be issued. No, sir.

MR. BUTZEL: Thank you.

I think that's all the questions I have from Mr. Conley.

THE COURT: All right.

MR. COHN: Just two questions.

REDIRECT EXAMINATION

BY MR. COHN:

Q Counsel made reference to the Ocean Dumping Criteria at Appendix M. Are you aware as to whether or not that is strictly applicable to Long Island Sound?

A No, sir. This is probably strictly applicable to outside the baseline.

In other words, this is ocean dumping criteria, but they are used as a guide for dumping on inland waters, too.

Q Just to make it clear then, Mr. Conley, this ocean dumping criteria at Appendix M of the Impact Statement is merely a guide and not binding as it would be if it were truly

ocean dumping, is that correct?

A That's correct.

Q The other question I had was the permit, I believe, does it not talk in terms of a point dumping?

A Yes, sir.

Q And if that was applied it would apply over a one mile radius circle, is that correct?

A No. That is in the criteria for monitoring, that one mile radius.

The dump itself is to take place at a point within that circle, at the buoy.

Q So it may not even go out as far as one mile, is that right?

A It may not.

Q What would you estimate? Do you have any idea if it would go as wide as the 1.1 square miles in the permit?

A I really couldn't answer. That's what the monitoring will determine, how far is it.

Q The effort is to put it at the point, though?

A Yes, sir.

MR. COHN: No further questions.

RE-CROSS-EXAMINATION

BY MR. BUTZEL:

Q Let me just clarify. I understand what you said about the criteria, but in fact the criteria were used as

guidelines, weren't they?

A Yes.

Q And indeed that's right in the Impact Statement?

A Right. You're talking about the pollution test?

Q Yes.

A Yes.

Q And the currents carrying things to known spawning or nursing grounds, that was what was supposedly applied according to the Impact Statement, is that not correct?

A It was used, yes, along what we know about using Section 404.

Q And in terms of the monitoring, I understand what Mr. Cohn was saying. But the fact is that the monitoring criteria which could possibly lead to a suspension of dredging depends upon that radius one mile away from the center point, isn't that the case?

A As I read it, yes sir.

Q So if they were spreading out to a hundred feet of that line, but not over that one mile line, you still wouldn't have any violation of the criteria that would require the cessation of dumping, would you?

THE COURT: You don't mean "criteria"; "condition".

Q The condition, yes.

They are referred sometimes as criteria in the permit,

your Honor.

Isn't that the case?

A Yes.

Q In your comment letter on the Revised Draft Impact Statement you gave the Revised Draft a rating ER-2. Could you just explain what the rating meant?

A It means EPA has environmental reservations about the report and basically because of a lack of data. They need additional information.

MR. COHN: That was on the Brenton Reef Site, is that correct?

THE WITNESS: Yes.

THE COURT: That was what?

MR. COHN: That was not on the New London Site. When they were given the opportunity to comment on it they only rated the Brenton Reef Site as ER-2, as I understand it.

MR. BUTZEL: That's all. Thank you.

I'm asked by my co-counsel to clarify:

Q (By Mr. Butzel) You didn't rate the site ER-2; you rated the Impact Statement ER-2, is that correct?

A Yes, sir.

MR. BUTZEL: That's all.

Thank you, Mr. Conley.

(Witness excused.)

MR. COHN: I call Dr. Pearce, please.

J O H N B. P E A R C E,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you please state your full name for the Court.

THE WITNESS: John B. Pearce.

THE CLERK: P-e-a-r-c-e?

THE WITNESS: P-e-a-r-c-e.

THE CLERK: And where do you live, Dr. Pearce?

THE WITNESS: Fair Haven, New Jersey.

DIRECT EXAMINATION

BY MR. COHN:

Q What is your particular occupation, Dr. Pearce?

A At the present time I'm Officer in Charge of the Sandy Hook Marine Laboratory which operates under the National Marine Fisheries Service and Director of Ecosystems Investigations at that laboratory.

Q And what is your scientific background?

A Academic training or interests?

Q Yes.

Well, can you give us first your academic training and then where your field of interest is?

A I have a BA degree in Conservation Education in

Biology from Humboldt State College in California; a Master's degree and a PhD degree in Zoology from the University of Washington; two years post doctoral training in Denmark at the University of Copenhagen Marine Laboratory; two years as a Research Associate at the Woods Hole facilities, the Marine Biological Laboratories in Woods Hole; and then taught in California for two years and took my present position in 1967 at Sandy Hook.

THE COURT: Well, since you went with the Government in 1967 you've been at Sandy Hook?

THE WITNESS: Yes, sir.

Q (By Mr. Cohn) What do you do there?

A What do we do there?

Q Yes.

A The laboratory initially had its principal responsibility in the study and management of marine game fish. In 1970 the laboratory was incorporated into NOAA, the National Oceanic and Atmospheric Administration, and our mission was broadened to include all fish, both commercial and game fish.

In addition to the fisheries work we're interested in the totality of the environment in which fish live in, so we've been concerned with a variety of environmental problems; problems of ocean dumping, dredging spoils, sewer sludge, deterioration of coastal wetlands - all of those aspects of

the environment that might impinge upon fish life.

We have major research programs in plankton ecology, in benthic ecology, fisheries biology.

Q Now, are you the Chairman of the so-called Subcommittee on ocean dumping that's been referred to in this testimony?

A Yes. The Subcommittee came into existence, I believe, in 1972. I attended my first meetings late in '72. And there is documentation as to the date when I was appointed Chairman of the Subcommittee. I saw a copy of that this morning.

THE COURT: That Subcommittee is on Ocean Dumping?

THE WITNESS: The Scientific Advisory Committee on Ocean Dredging and Spoil.

Q Now, showing you Defendants' Exhibit A, can you tell us what that is?

A This is a letter written by myself on 20 June, '73 as Chairman of the Subcommittee to my Regional Director, Mr. Russell F. Norris. He's the Regional Director for the National Marine Fisheries Service. His office is situated in Gloucester, Massachusetts.

THE COURT: Is that an exhibit?

MR. COHN: Yes. That's Exhibit A, if your Honor please, for the defendants.

A The letter is concerned with a Subcommittee meeting held at Newark Airport in June of 1973.

Q Do you know if other members of the Subcommittee saw that letter?

A The members of the Subcommittee or their surrogates that attended the meeting would have been furnished with copies of this particular correspondence, yes. In this case, Mr. Hard and Dr. Jan Pragar.

Q Now, can you explain how certain members were omitted from the carbon copies of that?

A It may have been that the membership of the Committee -- it varied somewhat initially inasmuch as I believe Dr. Pragar was initially a representative from EPA to the Committee.

Later on Dr. Phelps replaced Dr. Pragar in this capacity.

Subsequently the Committee was stable for a number of years. Recently Dr. Odale has replaced Dr. Mead.

Q Why don't you just read the first sentence of that paragraph.

A Okay. "Dr. Pearce developed a sequence of events which might allow the Navy to initiate their dredging activities on schedule, i.e. sometime in October or early November of 1973."

Q First of all, can you tell us whether the other mem-

bers of the Committee were aware of the statement that you made in that letter?

A Members of the Committee that were at the meeting and received this correspondence certainly should have been aware.

Previous discussions or discussions prior to this particular meeting also discussed what is contained in the paragraph of this particular letter.

Q When you say that you developed this particular scenario or sequence of events, what was the basis of that? Was it scientific, in part?

A In part it would be scientific. I don't recall all of the details of the meeting. The meeting lasted for about two and a half hours, as I recall.

Q There were some non-scientific --

A And there would be non-scientific aspects or things that are peripheral to science that would have been considered during the meeting, yes.

Q So you would say that you developed this particular statement or sequence on the basis of both your scientific discussions and certain non-scientific reasons?

A Yes.

Q Could you say what some of each were?

A Well, there are problems - if you identify other dredging and spoiling sites, or that is disposal sites for

A We may not be able to discern it.

dredging spoils, there are problems that may develop locally. There will always be objections to ocean disposal of dredging spoils. Having worked in this area for a number of years, I believe this to be true.

The public awareness today is of such a nature that each community, I'm sure, will have objections. The Brenton Reef Site off the mouth of Providence River had already been objectionable to a number of fishing groups and civic groups, and so on.

Q What about scientific reasons that might have led to that statement? Was there any consideration of --

A Well, I think we were generally dealing -- the Subcommittee has always regarded itself as not responsible for identifying various dredging or spoiling sites. That is the responsibility of another agency.

The Subcommittee has always seen itself as having an overview on these problems throughout the New England area, in particular at least up to now in Long Island Sound and adjacent waters.

So we felt in our deliberations that there was not sufficient evidence that the New London Site would be any more objectionable than, say, the Brenton Reef Site. And in point of fact, historically there had already been controversy surrounding the Brenton Reef Site, for instance.

In the deliberations of the Subcommittee through a

period of time we had identified alternative sites which immediately turned out to be objectionable to either state agencies or to certain public groups. There was no reason that, for instance, the Brenton Reef Site, scientifically, would have been any more advantageous to the public or the Navy than, say, the New London Site.

Q That was brought up at the meeting?

A That had been discussed, yes. Rather negative scientific aspect: We knew of no real evidence which would indicate that one site or another would be any more suitable.

Q Looking at this memo, can you read this particular passage to us at the bottom of the page?

A Yes.

Q This is Exhibit 10?

A Exhibit 10. It's a letter from myself. For the record, the particular memo was sent to a distribution list which is not attached here.

The memo is dated 20 July, '73 and was concerned with the Meeting of the Scientific Subcommittee on Ocean Dredging and Spoiling held in Waltham, Massachusetts on 13 July, '73. The sentence that I've been requested to read goes as follows:

"The Subcommittee recognized the New London Spoiling Site as the best site to use at the present time;".

Q Again that was on the basis of your scientific and

non-scientific discussion?

A This is based upon a number of discussions at this particular meeting and previous meetings.

Now, there's a semicolon there. Perhaps I should continue that sentence.

Q Why don't you. Surely.

A I'll repeat the first part of the sentence:

"The Subcommittee recognized the New London Spoiling Site as the best site to use at the present time; it saw no need to transport soils to another site further to the east".

Q Thank you. Did you receive any comments from other members of the Committee?

I assume they saw this memo. Did they contact you, give you their reaction to it?

A I have no written correspondence that I'm aware of. I have all of my correspondence with me in regard to the Subcommittee. I'm not aware of any written correspondence. Many cases following these meetings there are extensive phone calls. But I'm not aware of any criticism of this particular statement.

Had there been criticism this sentence would have been amended or changed to reflect the particular criticism of an individual participating in the Subcommittee, or of any state representative or federal agency representative that might have been at the Subcommittee meeting. If there were

objections this would have been amended and there would have been a subsequent piece of correspondence carrying a new date dealing with the same subject.

Q Let me ask you this: Did you receive any phone calls other --

A I couldn't recall. As I say, generally after these meetings I might talk with Dr. Klopper a week later, or I might talk with Dr. Phelps two weeks later or the next day, and I simply have no record of these phone calls.

Q But they saw these things and never wrote to it, in any case?

A Yes. There is a list of attendees at this particular meeting, and I believe Dr. Phelps was there.

Q Everybody on that list got a copy?

A That I can't say. I don't think so.

Generally, early in the deliberations of the Subcommittee minutes of the meeting would have been sent to my Regional Director and to members of the Subcommittee. At a period in the development of the Subcommittee and its activities various state agencies from the states of New York, Connecticut and Rhode Island requested that they be able to send participants to the Subcommittee meetings. These people have attended on a fairly regular basis. Occasionally we will have a meeting and a representative of one of the states is unable to come.

Once we started this policy, that is the states had an unofficial representation in the Subcommittee, then correspondence would go to these people. Any correspondence of the S[illegible]committee would have been sent to these people.

Q It was a pretty amorphous group; you had certain people coming in and certain people leaving, didn't you; unofficial representatives?

A Once it was under way the group, as I mentioned, was fairly stable. Once the Subcommittee had been established, as I say, the Subcommittee included Dr. Carl Hard from the Corps of Engineers, Dr. Phelps from EPA, and Dr. Mead from the U.S. Geological Survey and myself.

Q Now let me ask you this. Let me turn to another topic.

You are familiar with the New London Dump Site. Putting aside the fact that you were Chairman of this Committee, just looking at it as a scientist and the fact that you, yourself, know something about oceanography, let me ask you if you have any particular knowledge of this as an appropriate site?

A I'm aware of the various reports which have been prepared on occasion by the U.S. Navy, certain ancillary data that might be available in memo or in written form, conversations held with investigators who have worked at that site; people such as Dr. Bohlen, who is incidentally one of the

contractors working in the monitoring study; and other individuals.

These kinds of communication are formal in the written literature, semi formal in correspondence, and informal based on conversations and so on with people who have conducted research there.

Q Have you come to any conclusion concerning the New London Site as an appropriate site - as a containment site, let us say?

A We are conducting a monitoring and a baseline scientific study, so I would not arrive at any conclusions prior to the results of the studies.

That's an answer to that immediate question.

THE COURT: I don't find that an answer.

I mean you're not able to give what you would regard as a scientifically supported answer, right?

THE WITNESS: You could say -- would you repeat the question once again? Let's go back.

Q Well, essentially all I'm asking you is putting aside the fact that you are involved in the monitoring and so forth, just as an oceanographer that's familiar with the site, what is your reaction to this as a site, as a containment site?

I believe you've read Dr. Bohlen's affidavits as to containment, and so forth. Just to your particular scientific

judgment on that site.

A Are you asking me is it a containment site or a non-containment site?

THE COURT: Suppose he's asking you that.

Q All right. Let's start with that, anyway.

A Okay. At the present time I think that the scientific data that is available, or the data that are available would indicate that it is probably not a containment site in the strictest sense; that is, every element that is disposed of at a point will remain within that site.

But I think at the present time this would be true of almost any continental shelf disposal area. There are currents --

THE COURT: So it's a relative containment site, is it?

THE WITNESS: I wouldn't want to say that.

THE COURT: Isn't there some word "relative" used at some point?

MR. COHN: It is in the Impact Statement.

THE WITNESS: I wouldn't use the term "relative containment site", no.

THE COURT: All right. So it is not perfect containment?

THE WITNESS: That's true. But we don't know how imperfect. So you can't say "relative".

don't you feel that it would be wise and indeed isn't that

THE COURT: Well, with relation to other available sites, is it less suitable from the standpoint of containment than others that you know of?

THE WITNESS: If we compare it with sites that have been identified during the proceedings during these hearings, I don't think you could say that it's any better or any worse than, say, the Brenton Reef site at the present time.

There are current systems that exist in the Brenton Reef Site. There may be current systems in the alternative sites offshore which would render those non-containment sites.

It is true that in this particular area there is extensive current system, an indication of coast-wise movement of waters sometimes up to two knots. But I think similar measurements have been made in Providence Harbor and other areas that are used for dumping sites.

Q (By Mr. Cohn) Do you have indications from your studies that worm burrowing tends to stabilize the material that's dumped at the site?

A Well, there has been mention that worm tubes may result in instability in hardened sediments which are disposed of at the New London Site.

I think there's a considerable literature, however, that indicates that benthic or bottom dwelling organisms, certain small shrimp-like animals that form tubes and worms and so on, will tend to stabilize sediments. That is, as spoils become colonized by these organisms their presence, these tubes and so on, act as fine strings - you might think of them that way - that tend to hold the sand grains together.

There is literature - I could furnish you with exact citations, but Dr. Rhodes and other people have found this to be true.

BY THE COURT:

Q Well, accepting that as true, is the spoil with which we are concerned here such as to attract this kind of sea life?

A Studies done by the Navy and furnished in reports to my office suggest that these areas following previous dumping were recolonized, so there's no reason to believe that the sediments that are going to be dredged up during the present operations will not also be recolonized.

Q You mean some of them are transported to the site with the spoil -- well, you don't know that?

A No. Some organisms are. There's probably no doubt.

I don't think there's a marine biologist in this group that would not --

Q So you have the same life going on at the new site

that you had going on where it was before?

A Well, the life is moved there. Whether it survives -- because you have a change in salinity conditions. In the river the salinities tend to be reduced.

But within a fairly short period I think most studies that have been done in this area, that is New London or Providence Harbor, indicate that the dredging spoils are quite rapidly recolonized. Certain forms, they generally appear in a particular sequence. And as I've said, many of these will form tubes and so on which will probably tend to stabilize the sediments.

In fact, there is a research project ongoing in Europe in which they are trying to introduce various marine organisms to stabilize sediments where you have heavy currents to keep these sediments from being eroded. It's not concerned with dredging and spoiling, but simply with preserving certain beaches or tidal flats.

So it is known that certain benthic or aquatic life will, once it's present, tend to stabilize sediments rather than destabilizing it.

Q All right. That's very interesting.

This aquatic life which stabilizes the sediments is found in the dredged material when it is removed from the river, for example, right?

A Yes, sir.

Q And later on the same kind of aquatic life is found at the dump site in the spoil, right?

A Right.

Q Well, it's just moving the spoil from one place to another, isn't it?

A Well, you're moving the sediments and the organisms that are entrained in the sediments.

Now, because of changes in salinity and certain other environmental conditions the animals that came with the sediment may die sooner or later, but some will probably survive. But also you have other forms in the surrounding area which are reproducing the eggs or the larvae are carried to the dredge spoils just in the same way they would be carried anywhere else. They may settle and colonize this and form a community which tends to stabilize the sediments.

Q On balance, then, does the deposit of spoil in a new site with this accompanying development of aquatic life result in a greater overall quantity of aquatic life?

A Initially the life is reduced because, obviously, you have marine life --

Q Initially some injury is done to the process. But after that initial impact on the aquatic life has been overcome, then do you have more aquatic life than you had before?

A There is a possibility of having more, but I would say the probability is such that you would probably have the

same, or in certain instances reduced amounts of life.

Q Because you've removed a source for their support at the site of the channel where the dredged material was taken from?

A You've removed the animal life there. But once that's removed, the dredging area will also be recolonized if it's not continuously dredged for maintenance.

Q Well, that's what I say. So that would be recolonized and then you would have a new area at the dump site which develops aquatic life, right?

A Right.

Q So that in the course of some time you have a new colony as well as the old site producing aquatic life?

A That's true.

Q And accordingly more aquatic life than you had before; is that your view?

A You could have more possibly, but you may have the same amount. Without studying a particular situation it would really be difficult to say.

Q All right. Now, with respect to that aquatic life that we are speaking of here, does that present any adverse environmental effect?

A The new life?

Q Yes.

A It may be of a different quality. That is, let's say

you originally had a shrimp and then you put the mud, the dredging spoils down, and perhaps you have amphipods or another species of organism. This may have greater or less value in terms of the food chain. But again --

Q Well, my question is does it have an adverse impact?

A The animal life? I would say probably not, no.

I would find it hard to conceive of an animal that colonizes a pile of dredging spoils having an adverse impact in the total sense on other animals there.

Q Then what is there, what potential for adverse impact is there in the spoil itself? Is it the sediment that may reach shore?

A Well, it's the sediments that are deposited, you have the possibility of these sediments moving on shore and settling out as a fine layer of silt, which could conceivably chill marine life towards shore.

You have the concern that these sediments that are being dredged up and taken offshore may have pathogenic microorganisms in them; that is, bacteria and viruses that could cause -- would be inimical to the human well being; that is, people swimming on the beach. This is a possibility here.

Although our preliminary studies indicate that the dredging that has been ongoing in the past, we've studied that area, areas toward shore and areas up in the river, and the bacterial counts are extremely high up in the river, that

is, this area is heavily polluted and the present evidence indicates that previous dredging has not resulted in a long-lasting pile of mud heavily contaminated with microorganisms likely to cause harm to the human population.

And at the present time previous to the present dredging that entire estuary, that is the mouth of the Thames River, has bacterial counts much higher than would be acceptable for normal recreation and would probably preclude the closure of much of the area for shell fishing at the present time.

Q You attribute that to pollution that enters along the shore of the river?

A Any number of sources, yes.

Q You don't attribute that to anything transported from the dump site back --

A Right. This is before dredging, you see.

So what I'm saying is you may take material offshore and deposit it at this site, and indeed there may be pathogenic microorganisms in these sediments that may be carried shoreward.

But the preliminary studies - and I have to emphasize that they are preliminary, but they've been done by a very competent microbiologist - suggest that any movement from the dredging spoil site on shore may be masked by the large number of bacteria that are in the water anyway.

Q If there is anything, you can't discern it?

A We may not be able to discern it.

Q But you know there's some to start with?

A Pardon?

Q You know there's some of this bacteria?

A We know that this bacteria -- or there is evidence for bacteria in the water at the mouth of the estuary at the present time.

We know that in the sediments closer to shore than the dredged spoil area, we know that in these sediments there are large amounts of coliform bacteria which indicate the possibility of pathogenic bacteria being present.

Q To start with?

A To start with. Previous to the recent dredging episode.

THE COURT: All right.

BY MR. COHN:

Q Let me ask you just in closing about the monitoring project.

Are you supervising the monitoring project?

A I have ultimate supervision for the project. That is, it is being done under the hierarchy of the Ecosystems Investigations. The gentleman who is the immediate supervisor of the project is Mr. Robert Reid.

278

Q And is that monitoring program going on right now?

A The monitoring program is going on at the present

time. The research vessel is leaving Sandy Hook today, as a matter of fact, and they will commence a new series of operations on Monday.

I have a schedule of events which you might want to consider. This lists the various --

THE COURT: Are we being invited to go aboard?

THE WITNESS: You're welcome to come along and fish, if you want to.

THE COURT: Well, let's hear about the events you're offering.

THE WITNESS: Okay. Now, the events are tabulated on a sheet of paper which I have in my briefcase, and I've been out of the area for the past three or four weeks, so I would not be able to recite a detailed chronology.

THE COURT: Well, generally.

THE WITNESS: Generally, prior to dredging, research biologists were in the area measuring microorganisms; that is, the bacteria and so on.

Another group was there getting baseline measurements for the types of benthic organisms that are present in the area.

Still another group was there taking physical measurements of turbidity and current structure in the spoiling area; that is, the area to receive the

dredging spoils.

There have been a number of diving operations to assess the lobster populations, those larger invertebrate and fin fish that can be seen by divers.

So prior to the actual dredging and spoiling operations there has been quite a comprehensive study ongoing to obtain baseline measurements against which future change can be compared.

Q (By Mr. Cohn) Have you got any preliminary data at all?

A I mentioned some preliminary data a moment ago; that is, that we have evidence that there are large standing stocks of microorganisms in the waters.

I had a phone call from Dr. Alexander, who is with the New York Ocean Science Laboratory at Montauk. His phone call was received yesterday. And he has evidence that the turbidity resulting from a spoiling operation cleared within a half a mile of the immediate dredge spoil site. I don't have any timeframe to attach to this. But it was his observation that when a barge-load discharged the water was cleared within a half a mile of the site.

They also have preliminary current meters, data that have been obtained from current meters, as well as droghe studies. But I did not have time during the telephone conversation to get the results down in detail.

THE COURT: You say the water is clear within a half a mile. That's an indication that the spoil is going at the bottom?

THE WITNESS: That's an indication to Dr. Alexander that the fine materials, the silt, clays and organic materials that might be entrained in the water are going to the bottom before they leave the immediate area.

He did mention that this particular series of observations was made during a slack tide; that is, there was no flood or ebbing tide occurring at the moment.

Q (By Mr. Cohn) You are also in charge of selecting an alternate site, or do you have anything to do with that?

A In my responsibility with the National Marine Fisheries Service, no.

In my capacity as Chairman of the Subcommittee I mentioned earlier the Subcommittee does not have the responsibility for selecting any alternative sites. We can evaluate these sites. We can make recommendations in terms of their adequacy based upon scientific study. But the Subcommittee is not charged with selecting sites.

Q Are you doing any work on alternate sites?

A In a recent memo, most recent memo that I have written for distribution to the Subcommittee, I had suggested that

we have a meeting sometime late in September or early October to consider problems of alternative sites, alternatives to present methods of dredging.

The Subcommittee has a larger charge than just New London. We are to look at the general problems of ocean dredging and spoiling in Long Island Sound and the New England coastal waters to come up, hopefully, with some overview as to how these activities might be better conducted in the future.

Q Do you think the monitoring program could stop and switch to an alternate site if something developed that it was needed?

A I think it would be -- I don't want to use the term "disastrous". In terms of the researchers, research people commit themselves to a certain activity. Measurements have been made --

THE COURT: The question is do you think it would be desirable? Yes or no?

THE WITNESS: I don't think it would be desirable from a scientific point of view. We are committed to the New London site in terms of a study area.

THE COURT: I don't think so, either.

THE WITNESS: The monitoring program could easily -- there are personnel available with our

contractors and within NOAA, there are personnel who could consider alternatives.

THE COURT: You've answered that one, Doctor.

Q One final question. If the Navy had attempted to consider all dumping in Long Island Sound, do you think that would have been a viable and feasible possibility in an impact statement, in relation to this project, if they had done that?

A When you say all --

Q From a scientific point of view.

A I think it would be desirable for some group to do this. And that's one of the charges, one of the objectives of the Subcommittee was to get some kind of an overview.

I think it would be extremely difficult, for instance, for the Navy to develop an Impact Statement in which they considered all ongoing activities in Long Island Sound. Nobody's done this to date for any number of reasons. But if you had to, for instance, consider the impact of every steam, electric or nuclear generating plant, every sewer outfall, every dredging project, you would have an Impact Statement that would go to the ceiling. It would be very difficult.

They might restrict it to, say, 50 miles and consider all activities ongoing within 50 miles or 20 miles. This might be a tenable situation.

But even then it would be extremely difficult because

in many cases we don't know even where many outfall pipes are located.

MR. COHEN: All right. Thank you, Doctor.

MR. BUTZEL: I just want to ask a couple of questions now, your Honor, and then I will take a recess, if we could.

CROSS-EXAMINATION

BY MR. BUTZEL:

Q Just with respect to several of your last answers, Dr. Pearce, while they are fresh in my mind, what work has been done on the investigation of alternative sites?

A Within the monitoring program?

Q Within the monitoring program, yes sir.

A There has been nothing done by the monitoring program under the purview of the National Marine Fisheries Service.

Q There have been no studies commenced on the alternative sites?

A None whatsoever.

Q Secondly, just this last commentary, the question that Mr. Cohn asked you regarding impacts of overall dredging in the Sound.

You responded by referring, among other things, to thermal generating plants, sewer outfalls and the like. Now, restricting it just to the issue of dredged spoil disposal,

don't you feel that it would be wise and indeed isn't that part of the charter of your Subcommittee to view this in its cumulative framework and to look at the various dredging proposals, particularly the disposal projects, and assess them in terms of the additive loads on Long Island Sound?

A I think that there may be more interrelationship between a particular spoiling project at a particular site and many of the ongoing activities in that area not related at all to dredging and spoiling than there might be to any two dredge spoil sites in Long Island Sound.

I believe EPA has tentatively designated four such sites. I believe that the Corps of Engineers is making some attempt to take a comprehensive look at dredging and spoiling in Long Island Sound.

Q And you would agree that that should be done, is that correct?

THE COURT: What?

Q That you take a comprehensive look of dredging and spoiling in Long Island Sound?

A I don't think just in Long Island Sound. I think there are any number of reports which have been produced published by EPA and other agencies which suggest that we should look at these kinds of activities along the entire Atlantic Seaboard.

Q All right. I want to address myself and, therefore,

you to Long Island Sound and ask that question again.

Do you agree that we should have a comprehensive approach to disposal programs for dredged spoil in Long Island Sound, including facing the question of whether we should have any disposal in the Sound?

A I think we should look towards that. I think the New England River Basins Commission came into existence to consider these kinds of total problems within this drainage basin.

So there should be comprehensive research programs designed towards assessing the total impact of dredging, spoiling and other activities in Long Island Sound.

Yes, I'd say very emphatically that this should be done.

Q All right. Now, the disposal that is being undertaken now by the Navy at the New London Dumping Ground, is that creating an additive load on Long Island Sound? Additive to the stresses that exist there now?

A Previous studies of much smaller amounts of dredging spoil which were reported upon by the Navy would suggest that there had been no long lasting or extensive impact.

I think scientifically -- I don't think there's a marine scientist in this room who could say with any degree of certainty whether these materials are being carried off or have been carried in the past ten miles away or twenty miles

away, o. whether they will have a long lasting effect.

MR. BUTZEL: I wonder if I could have the Reporter read the question that I asked Dr. Pearce again.

THE COURT: When? Just now?

MR. BUTZEL: Yes.

THE COURT: The one he just answered?

MR. BUTZEL: Yes.

THE COURT: Sure.

MR. BUTZEL: I'm not sure that the answer was responsive.

(Question and answer read back.)

Q Well, the question was is this creating an additive load on the Sound?

A My answer is the same. Scientifically you could not answer that question without qualifying it.

Q Well, these sediments include elements which create significant chemical oxygen demand, do they not, in excess of the EPA criteria?

A Our first results of the impact of these dredging spoils on oxygen tension, we don't have any data from this yet, or if the data is available I don't have access to.

Q I'm asking you about the spoils that we are dumping here, Dr. Pearce; the materials that are being dumped here.

There are criteria and there are analyses that have

been made of those spoils before. And don't they indicate that they are the type of material that creates a substantial chemical oxygen demand?

A We would have organic enriched materials associated with these spoils that would depress the dissolved oxygen in the water column.

Q You do, in fact --

THE COURT: Let him finish his answer.

MR. BUTZEL: I'm sorry.

THE COURT: Did you finish?

A I'm saying this could occur.

At the present time I don't have data before me to say whether that has happened with the current dredging activities. That's what you're asking about. You said these spoils that are being dumped. And I don't have the data at the present time.

THE COURT: So you don't know?

THE WITNESS: So to give him a scientific answer, I could make any number of educated guesses, but he's not asking me that.

MR. BUTZEL: I'm not asking for guesses.

THE WITNESS: He's asking for a yes or no question.

Q I'm referring specifically to the constituents of the dredged spoils that are described in the Environmental

Impact Statement, and do they not indicate that that chemical oxygen demand is there?

A The data based -- you know, the previous analysis of these sediments that are in the bottom of the river indicate that they might have a high COD or high BOD and could depress the oxygen content of the receiving waters to some extent. That is true.

Now, what extent this has -- you mentioned additive effect. So in this sense it probably will have an additive effect. The effect of this, though, is unknown.

MR. BUTZEL: I understand. But you've now answered the question.

I thank you, sir.

THE WITNESS: Okay.

MR. BUTZEL: Your Hon[illegible], could we have a recess at this time?

THE COURT: All right.

(Short recess.)

BY MR. BUTZEL:

Q Dr. Pearce, I would like to discuss with you briefly your role and the Scientific Advisory Committee or Subcommittee's role in the site selection process here.

Did the Scientific Advisory Committee select this site, New London?

A No. It's not the responsibility of the Subcommittee to select the sites.

Q And the EIS states that the Scientific Advisory Subcommittee recommended the New London Dumping Ground. Do you claim that the Scientific Advisory Subcommittee recommended the New London Dumping Ground?

A This may have grown out of a series of conversations within Subcommittee meetings historically in which we had looked at the merits of a variety of sites. Early on, the Brenton Reef Site had been identified as --

THE COURT: Well, before going into all the history leading up to what happened, can you give an answer as to whether or not you did recommend the New London Dumping Ground or what you did say about it?

THE WITNESS: That's what I'm leading up to is what we did say about it.

THE COURT: Well, I would rather you say it and then explain how you got there.

THE WITNESS: Okay.

A In the sense that we went to the Navy or the Corps of Engineers or other principals and said we recommend this site, no.

There were conversations in the Subcommittee, as well as with other people who attended the Subcommittee meetings, that it made relatively little sense to barge materials from the Thames River Dredging Site some 30 or so miles further east and put it at a site where we knew no more about that site than we did the New London Site and where the impact could have been just as extensive as at the New London Site.

We therefore, felt in the possible interests of the public having to pay for these activities, that the New London Site which had been a site that had been used before should be utilized for these activities. And this was a consensus that grew out of these meetings.

Q The New London Site rather than the Brenton Reef Site, is that what your consideration was limited to, sir?

A Rather than the Brenton Reef Site, that was an issue at one point, yes.

Q Is that what you mean by "recommended the site"?

A I didn't say. As I say, we did not recommend. The word "recommend" perhaps should be put in quotes.

Q Would you say then that you acquiesced in the selec-

A That's true. Well -- yes.

tion of the New London Site as compared to Brenton Reef?

A No. Acquiescence is not a good word there, either.

Q Well, I'm trying to define exactly what it was that you did.

THE COURT: Well, do you have the right word?

THE WITNESS: Pardon?

THE COURT: Do you have the right word?

THE WITNESS: There was a deliberation and a consensus that based on a number of factors you could consider some of it negative scientific information, and since there was no overriding scientific information that might suggest we should use Brenton Reef or New London and since there were other factors involved, that is fishermen who work at the mouth of Providence Harbor probably more so than at the mouth of the Thames River estuary, that it did not make good sense to haul materials further to the east and take materials generated in Connecticut and dump them off the shores of Rhode Island.

Q All right. Now I understand, I think, what you're saying. But that means that the discussions and the concurrence related to the use of the New London Site as compared to having to take the spoils all the way down to Brenton Reef, is that correct?

A That is a part of it.

We also -- you have to keep in mind that the Sub-committee very early on said that any dumping should be monitored; that there should be an in depth ongoing study to monitor the possible effects.

And very early on we said that if there was any damage observed, then dredging and spoiling would immediately cease until such time as an alternative site could be put into use. And this alternative site was to be defined and studied beforehand.

Q All right. I understand the monitoring. I'm trying to hone in on and just define this concurrence, this consensus.

Was it consensus of New London as compared to Brenton Reef? Is that what you're talking about?

A Consensus implies somehow that we are acquiescing --

Q That was your word, Dr. Pearce.

A Okay. Whoops. Okay.

There was a consensus within the group and various people who attended these meetings that the New London Site would probably be more favorable, given the body of knowledge that we had at the present time.

Q More favorable than what?

A Than Brenton Reef.

Q Okay. Thank you.

A Yes.

Q Now, who were these other people to whom you referred? There was a consensus, as you said. Who were these other people?

A We would have to go back and see the list of people in attendance at the various meetings.

The first meetings that I was involved with there were no notes taken. I had not been appointed Chairman of the Subcommittee, so I felt no particular responsibility for drafting an extensive series of notes.

THE COURT: We've been through that, haven't we? Haven't we seen those reports of those meetings with lists of people who received copies?

MR. BUTZEL: If that's what Dr. Pearce is referring to, then the answer is yes.

I'm not sure that that's what you're referring to.

Q Are you referring to the June 20th meeting?

A There were meetings previous to that meeting. The collection of documents or notes relating to specific meetings or telephone conversations was in a packet that I had an opportunity to review. There were meetings prior to that, I believe, where these matters were discussed.

THE COURT: Without identifying by name who these people were, are those the people who you would consider qualified to deal with this kind of

a question and to express an opinion on it?

THE WITNESS: They were qualified and had an interest in the situation.

There might be members -- I think Mr. Steever from the State of Connecticut had been at some of those meetings, people from the Corps of Engineers --

THE COURT: All representing a public rather than a private interest, is that it?

THE WITNESS: I don't know if we had any private representation at those meetings or not. Perhaps somebody from the Corps might be aware. As I say, very early in my involvement --

THE COURT: But largely this was a group of people with public interest?

THE WITNESS: People with an interest in the situation, a public interest, yes, sir.

THE COURT: All right.

Q (By Mr. Butzel) I'm left a little unclear on that. Are you saying that there was a meeting before the June 20th meeting?

A As I recall, there was.

Q Who was at that earlier meeting?

A Again it was my first attendance to these meetings. My Regional Director, Mr. Norris, had called me up and said would I represent him at these meetings. I did.

As in any meeting, there's a sea of faces, people that you meet, but I would be remiss in saying I could identify particular people.

Q In your recollection, when was the New London Site first raised?

A I think about the time of the first meeting. We were talking about problems in Long Island Sound. Now, there may be a memo written by Dr. Eipper which might enlighten.

I think in one or two cases Mr. Eipper took notes on these particular meetings. And these might indicate some of the discussions that transpired during the tenure of these particular meetings.

Q We have Dr. Eipper here and I'm sure he will be able to tell us.

I want to show you Exhibit 17 in this case, which is a memorandum from Mr. Andreliunas, and I want you to look at Paragraph 3 of that memo.

Have you had an opportunity to look at that?

Also why don't you look at Paragraph 5 of that memo.

Have you had a chance to look at that, Dr. Pearce?

A I'm just coming to Paragraph 5 now.

Okay. I've read Paragraphs 3 and 5.

Q That indicates that the June 19th meeting is where this proposal on New London was raised, does it not?

A That there had been previous discussion of this at

another meeting, however.

Q You think there had been previous discussion?

A Yes. The first meeting I attended was in Waltham, Massachusetts at the Corps of Engineers, the New England Division Headquarters.

I can recollect the setting of that particular meeting. And this meeting was subsequent to that.

And at the earlier meeting discussions, and a wide range of discussions were held, which resulted in this particular focus possibly on the New London Site.

Q And you have no minutes, I guess, of that meeting?

A I may have hand script minutes. I have a substantial -- I have my entire file on this matter. But, unfortunately, I haven't had time to go through it.

There may be handwritten minutes that I could furnish to the Court.

Q Do you have any idea of the date of that meeting?

A Right offhand, I don't. Maybe Mr. Andreliunas would have some idea.

Q Do you think that this memo that Mr. Andreliunas has written here accurately describes what went on at the meeting of the 19th and the manner in which the selection of the New London Dumping Site was made?

A I don't think it really indicates how the selection was made. The selection, as I understand it, was made in

April of this year and I'm not privy to all of the deliberations that have gone on in terms of the Corps of Engineers selecting the site.

Q Does it fairly represent, insofar as you were privy to these conversations, what went on at those meetings?

A I would have to look at my particular minutes of that meeting, if you have them available, and see whether they are comparable.

Q You're not able to tell me?

A Not right off. This is very brief. I think my memo went on for three or four pages, so there was a considerable amount of discussion.

Now, in terms of Item 5, or Paragraph 5, where he says there are many factors involved; I think this is true.

The Subcommittee has always seen itself as one being involved with the total population, not just people from the State of Connecticut or the Corps of Engineers, but representing the American citizens' interest in this matter in the total sense - environmental and otherwise.

For instance, we have repeatedly said that there should be hearings in which the Subcommittee can meet with the public in terms of informing them how we would see the monitoring program going and so on. So the Subcommittee - and I think I speak for the Subcommittee as Chairman, the Subcommittee has always viewed this thing as rather broad;

that there are scientific -- it's designated as the Inter-agency Advisory Subcommittee and we are scientifically oriented. But we all recognize there are many political, socio-economic factors involved in all of this and you cannot discount them, you cannot arrive at a decision without them.

Q Let's discuss those right now. We arrived at the conclusion earlier that there was a consensus in the Sub-committee that New London was as good or better a site as Branton Reef, is that correct?

And could you now indicate specifically on what basis that was made? I think you said that you didn't have very good information on either of them?

A Well, we had the reports from the Navy on studies conducted at New London. At the time I don't believe Dr. Saila had published his report, but we did have some information from Dr. Saila concerning the Brenton Reef site.

And in both situations, on balance, it would appear that the New London Site, given what we know scientifically, might be just as adequate as the Brenton Reef Site.

Q Just as adequate?

A Just as adequate.

Q Okay. If you assume that it would be just as adequate - and we will return to that in just a moment - what reasons then were there for using New London over Brenton Reef?

A The whole matter of the cost of transporting the

Q At this time I gather the interim report was available?

A The data from the interim report. During the early discussions I believe there were people from the Navy who were not testifying, but providing this information on an informal basis.

Q And what was the data that you relied on personally, if you recall? What data did you review about New London?

A The discussions in regard to the Navy's work at New London where it was stated that they saw colonization, that there was not any evidence of significant impact.

I believe there was some discussion that based on certain bathymetric measurements that the materials had not moved a considerable distance out from the New London Site. The data from Dr. Saila's study indicated that, in fact, the materials had stayed generally in place at the Brenton Reef Site, although there were pockets --

Q Let's limit it, first of all, to New London, Dr. Pearce.

I'm asking you about the data that you had as to New London. And you are indicating to me that you had the Navy preliminary data in May, is that correct?

A Right. That came out during discussions with --

Q Now, at that time the Phase 3 reports, that's the post dumping operations, hadn't even been made, had they?

A No. That's what I'm saying. This was based on the Navy's conversations, conversations with Navy and Corps people during these meetings.

Q But the Navy's -- their experimentation hadn't even been done at that time on Phase 3, had it?

A No. The final report just came out very recently.

Q I see. So that at that time you didn't have any indication, did you, sir, as to whether the spoils had moved or not? They hadn't even made measurements at that time as to whether the spoils had moved, had they?

A There were discussions that I recall where it was stated that they had not moved.

Q Well, how could they know that they had not moved, sir, if they hadn't even made the measurements yet?

A The Navy people?

Q Yes. You didn't check into that?

A We didn't go in -- we had no reason at this time, during these initial meetings, we had no reason to doubt statements that were made by the Corps people or the Navy people.

Q I guess I misunderstood what your role was.

How extensive had that testing been at New London? For example, sir, do you recall the measurements? What were the current measurements, do you recall?

A Made in New London?

Q Yes. What did they show?

A Recent data, it was of a relatively short duration.

Q What is relatively short?

A Apparently the current meters operated for a period of twenty-four hours or less.

Q Do you think that's a valid basis for measuring currents?

A That's not a valid basis for measuring currents, no.

Q I see. Now, do you know what speeds those current meters showed, maximum speeds, sir?

A I've been told that the currents are in the vicinity of around two knots. Now Dr. Bohlen, I believe, was at one of the earlier -- in fact, probably the first meeting that we had; and Dr. Bohlen, as I recall, did discuss some of his measurements in this area.

There was no indication at these earlier meetings from Dr. Bohlen or anyone else that there was a possibility of adverse effect to the site.

Q Well, we will have to blame Dr. Bohlen for that. He doesn't reconstruct the July 13th meeting the same way you do.

But you indicate that you think there were indications of currents as high as two knots in this area, is that right?

A It's well known, yes.

Q That's a hundred centimeters per second, right?

Do you know at what current speeds silt of the site that's involved here erodes?

A At speeds somewhat less than that.

Q At 20 centimeters, right?

A You can get resuspension of fine silts and clays, that's true.

Q 20 centimeters; okay.

Now let's talk about the Brenton Reef studies. How long had the Brenton Reef studies been carried on at the time that your scientific Subcommittee met?

A Since 1967, when they initiated these studies.

Q So there was something in the order of seven years of research that had been done on Brenton Reef at the time you were asked to choose between these two sites, wasn't there?

A At the time of the first meeting, something like five years.

Q When was the first meeting?

A '72, I believe. Late in '72, it seems to me. '72 was the initial meetings of the people involved in this.

Q In any event, we are talking now about June, July of 1973. And you said there wasn't anything to pick between the sites.

Do you know what the currents are that Dr. Saila noted and measured at the Brenton Reef Site?

A Currents in Providence Harbor had been measured around two knots.

Q But I'm asking you if you know what the currents were over the silt and over the spoil at the dump site. Did you ever bother to check into that?

A No.

Q Would it surprise you, sir, to learn that the currents that Dr. Saila measured never exceeded 15 centimeters per second?

A I would have to see the documentation.

Q Good. Why don't we look at it.

This is a document entitled "Dredge Spoil Disposal In Rhode Island Sound" by Dr. Saila and others, right? When was it published?

A 1972.

Q So it was available well before you met in the Scientific Advisory Committee, wasn't it?

A Well, it was published then. It may not particularly have been available or at least distributed --

MR. BUTZEL: I think this Court can take judicial notice that it was submitted as an exhibit in Sierra Club vs. Mason, within this Court, in 1972.

If not, I'll be glad to put someone on who can attest to it.

I'll have Mr. Andrelunas indicate. He sub-

mitted it at that time.

THE COURT: Did I have that?

MR. BUTZEL: No. It was Judge Newman, your Honor.

Q (By Mr. Butzel) On Page 3 under "Characteristics of the Physical Environment" this report is referring to the Brenton Reef Dump Site. Would you read Paragraph 1 there?

A "Currents in the dump site region were dominated by the semidiurnal tide. Instantaneous bottom currents rarely exceeded 0.3 knots, whereas the net tidal transport velocity was no greater than 0.1 knots".

The net tidal transport --

Q The actual velocities, then, you said rarely exceeded 0.3 knots, right?

A Three tenths of a knot.

Q And that's approximately 15 centimeters per second, right?

A Something of that nature.

Q Okay. Now let's look at Pages 22 and 23 here.

These are the charts of the actual current meter measurements that he took, aren't they?

A They are rosette diagrams indicating current directions. Speed histograms, he calls them.

Q And the speed histograms indicate for what percentage of the time currents exceeded various speeds, is that correct?

A That's true. Well -- yes.

Q And isn't it the case that there is at best only two instances in which the currents even got up as high as .35 knots?

A Yes, that would be true.

Q And in those cases -- I mean in one case it was only for .7 per cent of the time, isn't that correct?

A Yes.

Q And in the other case it was even immeasurable?

A That's what he indicates here, yes.

Q Yes. Now, do you know how those figures compare with the bottom currents that the Navy had already developed and included in its report?

A Substantially less.

Q Substantially less. About one-fourth of the speed, isn't that correct, sir?

A Well, perhaps it would be less than that.

Q And the Navy studies actually show currents going up as high as 45 and above 45 centimeters a second and above, don't they?

A Yes, they do.

Q Okay. And we have already indicated that that's the speed above which silt suspends.

Now, can you tell me -- well, let me ask you --

THE COURT: What's that that you threw in there?

MR. BUTZEL: He already testified to that. Silt of the sort we had --

THE WITNESS: Silt would be suspended -- resuspended or suspended at speeds somewhat less than the Navy report says maximum currents are in New London.

Q Now, I think we established this is a 1972 report. That would reflect at least four years of monitoring that Dr. Saila had done at Rhode Island, does it not?

A That's true.

Q And in that period there had been no indication of spoil transport, of any significant spoil transport, had there been?

A No indication from the site, that is true.

Q You really didn't have that kind of data in any sense for New London, did you? You didn't have four years of data, did you?

A No.

Q You didn't even have a few months of data at the time?

A That's true.

Q And you did have data from New London that showed speeds sufficient to erode the type of material that we're talking about here?

A Well, that's a controversial point inasmuch as some

testimony suggests that this goes down as large lumps, unlikely to be eroded. I think that's in Dr. Bohlen's affidavit, where he says he's not concerned with the short-range problems, and I think specifically erosion. He's more concerned with the long-range process of escape of materials from these sediments.

Q Over a long period of time?

A Over a long period of time.

But this would also be a concern at the Brenton Reef Site. I believe EPA and other people are investigating this problem at that site.

Q There may have been some indication that there's actually been movement there at the Brenton Reef, then?

A No, not movement of sediments, but escape of certain toxic moieties, which I think is what Dr. Bohlen was concerned about in his affidavit.

Q I think Dr. Bohlen testified both on sediment and escape.

A I didn't hear his testimony. But I'm saying having read his affidavit, I'd have to look at it.

Q Even at Brenton Reef, though, despite the fact the currents there are one-third to one-fourth of what we have at New London, and it's your testimony that there was nothing to choose from as between the sites; is that correct?

A At the time, as I say, we did not have available to

us -- or I personally didn't, I won't speak for all members of the Subcommittee, but this document was not widely distributed as a basis to make a choice from.

We were looking at what was known, what had been reported verbally at these various meetings and the discussions.

Q I'm a little confused by what you mean what was reported verbally. What was known?

A Much of the work that's reported upon here is work which is sponsored, in part at least, by the Corps of Engineers. I don't know if that's true of this particular document or not.

Apparently this is a report to the Sport Fisheries and Wildlife. But I think that the Corps is well informed on dredging and spoiling activities in the area. And this would, I'm sure, in these discussions - Mr. Hard being a member of the Subcommittee, would have informed us directly, I'm most certain.

Q You were relying on the Corps, then?

A Not solely relying on the Corps, but in part.

Q What else?

A I mean Mr. Hard is a member of the Subcommittee and brings to us the Corps' great deal of knowledge about ocean dredging and spoiling.

Q I certainly don't question Mr. Hard's qualifications.

I just wondered what else you relied on, sir.

A Subsequently we have had access to this document. We also had the Navy's Final Reports.

Again this would seem to be in recent history, let's say, no reason to believe, I mean having the Navy's report and this report, that one site is more preferable to another.

Q The Navy's report only covers seven months, doesn't it?

A It could cover, but there are many reports that cover two or three or four weeks, or sometimes several months.

Q The Navy's report has considerably higher currents --

THE COURT: Well, I mean you're arguing with the witness now.

MR. BUTZEL: Okay.

Q Have you read the December, 1973 report that the Navy put together supplementing what has been identified in this case as Exhibit J?

A I have read it and I have it with me.

Q You have had a chance to see that?

A I have read it some time ago.

Q What do you think about the oil and grease measurements there, sir?

A I would have to go back and review them. I would be glad to read it.

Q You don't recall anything particular about that, at this time?

A No, nothing that sticks in my mind, no.

Q This is from Page 140 of this report, which is Exhibit 12 in this case. Would you read that paragraph 10 on Page 140?

A Page 140, Paragraph 10:

"During the winter intervening between Phase 2 and Phase 3, deposited spoil was scoured from the dump site by tides and storms resulting in a 45 per cent decline in oil and grease concentration to a near-background level of 739 parts per million".

Q What do you think of that?

A I would have to see a wealth of comparative data.

Q You haven't looked at that up till now?

A I have looked at other data concerned with oils and greases.

Q No, I mean here in New London. Have you looked at the data for New London?

A No, I haven't.

Q You haven't. Thank you, sir.

Am I correct that you are with the National Oceanographic and Atmospheric Administration?

A That's true.

Q And your Agency put together a monitoring program,

sponsored a monitoring program that's actually a makeup by various groups, is that not correct?

A That's correct.

MR. BUTZEL: I don't have extra copies of this.

THE WITNESS: I have a copy, if you want to introduce it for evidence.

THE COURT: Well, go ahead. We will work with one.

MR. BUTZEL: Fine. Could we have this document marked and introduced in evidence? "A proposal for an environmental survey of effects of dredging and spoil disposal in the Thames River and New London Dumping Ground."

THE COURT: Exhibit 20.

(Plaintiff Exhibit 20: Proposal for environmental survey of effects of dredging and spoil disposal, marked full exhibit.)

THE WITNESS: What is the report number, please, at the bottom?

MR. BUTZEL: Informal Report No. 25-A.

THE WITNESS: Okay. That's correct, there was a 25 and it was abridged and called A.

MR. BUTZEL: All right. The title is "A Proposal For An Environmental Survey of Effects of

Dredging and Spoil Disposal in the Thames River and New London Dumping Ground". It is by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration.

And you do have a copy of that document with you?

THE WITNESS: I have two copies with me, so there is one available.

MR. BUTZEL: Your Honor, I wonder if we might also introduce into evidence this report by Dr. Saila that I was referring to?

THE COURT: Why not. Plaintiffs' Exhibit 21.

MR. BUTZEL: It is titled, "Dredge Spoil Disposal in Rhode Island Sound" by F.B. Saila and others, Marine Technical Report No. 2, University of Rhode Island.

THE COURT: What is the date?

MR. BUTZEL: The date is 1972.

THE COURT: Who is the document by?

MR. BUTZEL: Salla, S-a-i-l-a.

(Plaintiff Exhibit 21: Dredge Spoil Disposal in Rhode Island Sound, by Saila, marked full exhibit.)

BY MR. BUTZEL:

314

Q I just would like to run over a couple of these

sections. Have you had an opportunity to review this report?

A Yes. I have a copy, I think if we're going to review it. It has tabs on it, that may make it easier to run through.

Q That report is dated May 21st, 1974, is that correct, Dr. Pearce?

A That's correct.

Q Just briefly on Page 13 doesn't that indicate that it is really dangerous to make comparisons between Rhode Island Sound and Long Island Sound?

A What are you referring to?

Q Towards the bottom.

I'm at a little bit of a disadvantage. We must have different pages. I have an introduction to it, to my copy. You have no introduction.

A Well, I don't know. Maybe you'd better bring your copy over here.

THE COURT: Here is the one that has been introduced.

Q If you haven't seen it, I'm not going to run through it; it will speak for itself. I just wondered is this part --

A It's the same.

Q Okay. Doesn't this indicate some rather significant differences between -- why don't you just read it at the bottom

of Page 13.

A Okay. The paragraph goes as follows:

"Similarities (water temperatures and chemistry, dominant benthos with their high tube densities) between Rhode Island Sound and Long Island Sound Dumping Grounds invite extrapolation of disposal effects from former to latter. However, there are enough differences that too-direct comparisons should be avoided. The Long Island Sound Site has shoaler water depths" --

Q That means shallower, I presume?

A Shallower.

" . . . and maximum bottom current velocities (Naval Oceanographic Office Report) maybe three times the maximum o.35 knots measured at the Rhode Island Sound location. Instantaneous bottom currents of up to 2.9 knots have been measured in the west end of Fisher's Island Sound, two miles from the New London Disposal Site (Dehlinger, et al, 1973). Also, relatively polluted spoil from Providence Harbor was dumped early in the Rhode Island Sound operations, and was in most cases covered by less organic, more erosion-resistant sediment from upper Narragansett Bay. This pattern is recommended to minimize disposal effects (Saila, Pratt and Polgar, 1972) but it is doubtful that it can be followed in dredging the Thames."

Q And, in fact, it's not being followed in dredging

the Thames, is it?

A It's not part of the operational procedure, no. Although it depends on how the activities are being carried out.

It is conceivable that the upper surface layers can be removed and deposited before the deeper layers. But whether that's --

Q That's not being done, as far as you're aware, is it?

A As far as I'm aware of it, it's not being done, no.

Q Thank you. In terms of impacts of spoils, did any of the data you had before you in the Scientific Advisory Committee deal with the uptake of spoils or polluted materials by organisms at the New London Site?

A There's a fairly significant literature dealing with this phenomena, that is uptake of heavy metals, PCV's, and so on. I would imagine that most members of the Subcommittee are at least reasonably familiar with the phenomena.

Q That wasn't tested for in connection with the Navy's study of New London, was it?

A One could assume that these phenomena would be existent wherever you had spoils, or sludges, or other materials that are contaminated and are removed, put into another area. There's always the possibility of uptake.

Q And that, in turn, can be carried through the food chain from smaller organisms into larger life?

A It can be compared through, but you have to use -- recent work, at least, indicates you have to be very discriminating in how you evaluate this data.

Some small worms living in heavy contaminated sediments, their life span is so short that they do not take up significant amounts of material. Hence, if you analyze these particular animals you would find no evidence of uptake.

Q And others there may be uptake?

A In other instances.

Q Including some of the type that are known to be present in the New London Dumping Site?

A Including some of the forms that may be present anywhere in Long Island Sound or along the Middle Atlantic Coast, that's true.

Q Now, there has been no effort up to now to measure long-term impacts in and around the New London area, has there?

A Well, to measure long-term impacts you have to measure over a long term. So the studies have just been initiated.

The Subcommittee has recommended, however, that such long-term studies be conducted. And these recommendations appear in at least two memos that I'm aware of.

Q They are not being undertaken in connection with the New London proposal, are they?

A They could not because, as I say, long-term measure-

ments have to be made after the fact, after the spoils are in place.

But the studies that have been proposed lend themselves to forming an excellent base for long-term studies. That is, we are looking at heavy metals and sediments and microorganisms as indicated with contamination in sediments in water, and we are collecting animals at the present time. That is, prior to disposal - to see if there is any evidence of uptake at the present time.

The same forms can be monitored at later periods. During the two years, the present monitoring study will run as well as during possible long-term studies that should be carried out.

Q Your Subcommittee was unable to assess, didn't attempt to assess, did it, the possible long-term impacts here?

A You will have to -- I think we've always been concerned with long-term impacts of any dredging or spoiling. They would probably be the same at New London as it would be at Brenton Reef or an alternate site in the open ocean.

So we have been concerned with long-term effects. Dr. Phelps, part of his research or at least at the laboratory is concerned with these long-range effects, so he obviously would be concerned.

Q You recognize the potential of possible adverse

long-term impacts here, don't you?

A Oh, yes. This is something of significance.

But, again, it would be true at any spoiling site or at any site where waste materials are being disposed of.

Q There is one distinction here, isn't there, or two distinctions. First of all, this is fairly close in area to shore, is it not?

A One could say it is close in, yes.

Q And some of the other sites are considerably more distant removed, are they not, from the shore coastal areas?

A Some sites, the various sites are different distances. They tend to be fairly close to shore at --

THE COURT: Are we building up to an argument or to a question? I mean because this has all been covered and is pretty self-evident.

MR. BUTZEL: Very good, your Honor.

Q I would just like to ask you a few additional questions about the monitoring program, Dr. Pearce.

This is a copy of the permit that has been issued in this case, which is Exhibit 11, and it includes the special conditions that were established in respect of the monitoring that was to be carried on. And I would just like to clarify a couple of things, if I could.

Why don't I give you this one, Dr. Pearce, and give the Judge the official exhibit.

* * * * *

projects known the Corps' own project in the Three

C H A R L E S D. H A R D Y,

called as a witness, being first duly sworn, was examined, and testified as follows:

THE CLERK: Will you please state your full name for the Court.

THE WITNESS: There's a correction: It's "Mr." Charles D. Hardy, Oaklawn Avenue, Soathold, New York.

THE COURT: Just what is your job at Stony Brook?

THE WITNESS: I'm a Research Oceanographer.

THE COURT: And you work for who?

THE WITNESS: The Marine Sciences Research Center, State University of New York, at Stony Brook.

THE COURT: Marine Sciences what?

THE WITNESS: Marine Sciences Research Center, State University of New York.

THE COURT: Which university?

THE WITNESS: State University of New York, at Stony Brook.

MR. BITTEL: Your Honor, I have an extra copy of this exhibit, if you would like it.

THE COURT: Thank you.

DIRECT EXAMINATION

BY MR. BUTZEL:

Q Mr. Hardy, would you just briefly describe for the Judge what the Marine Sciences Research Institute does and your particular functions and role?

A The Marine Sciences Center is mandated by the State of New York to conduct research on the coastal waters and environs of New York State. And in that process we have laid particular emphasis on it in water quality and environmental problems in not only Long Island Sound, but the New York Bight and the New York Harbor area.

Q And you, yourself, have had occasion to work to some considerable degree in Long Island Sound, is that correct?

A Right. I've been associated with the Marine Sciences Center for five years and we have performed, I think, for the past five years oceanographic surveys in Long Island Sound. Probably the work that I have been involved in that's most pertinent to this particular problem is a report on the movement and quality of Long Island Sound waters; another one, the dissolved oxygen distribution in Western Long Island Sound and then a paper that I have coming out in the Symposium of the American Chemical Society, "Nitrogen in Long Island Coastal Waters", as well as some research that we are presently carrying out.

Q Now, you have familiarized yourself with the Navy's

Q I think the thrust of it is you look for a place with the lowest possible velocities as you can, is that correct?

A Right. For a containment site you would look for a place with the lowest possible velocity. And from reports that we have received is that the Rhode Island Dump Site, as far as I can learn, there is no evidence of movement to date, of significant movement.

Q There has been some dumping at New Haven in Long Island Sound. Has there been evidence of movement or reported movement of that sediment at New Haven?

A Right. Personal communication with two of the investigators, Gordon and Rhodes, indicate that the spoil is moving. This dump site is in the central basin of Long Island Sound and in what would assume to be lower tidal current velocity.

There they had an extensive current measuring program done by Bob Gordon and they found that the net tidal flow was about 1.7 centimeters per second; which amounts to about .8 nautical miles per day. And the maximum spring tide velocities reach about 40 centimeters per second, which is just about what we appear to see at the New London Dump Site.

THE COURT: What is this site you're talking about?

THE WITNESS: This is at New Haven, outside New Haven Harbor.

Q And even there there has been movement of sediments?

A Right. There is now evidence that the spoil is moving.

I might add on this particular one that this dump site would be protected from swell.

Q When you say "this" you are referring to New Haven as distinct from New London?

A Yes. The New Haven Dump Site is protected from sea swell.

Q Would you now just generally indicate - I think it is set forth pretty much in your affidavit - the impacts that you foresee or the risk that you foresee in connection with the dumping in New London if we have the dispersal that you're talking about?

A Well, the dumping of polluted spoil - and the available evidence indicates that, indeed, the spoil from New London Harbor is polluted - the net drift is westward into the Sound. And this drift can occur, depending on the season of the year and physical conditions, either northwesterly, which is most common, towards the Connecticut Shoreline or during periods of high fresh water flow it can move -- well, our seabed drifters that we dumped on the 20th of April, which is a period of maximum fresh water flow into and out of Long Island Sound, they moved within eleven days to the shores of Southold Town on Long Island at a rate of I think it was

V Y T O L. A N D R E L I U N A S,

recalled as a witness, having been previously duly sworn, was further examined, and testified as follows:

THE CLERK: Previously sworn, your Honor.

THE COURT: Yes.

You were previously sworn in this case, Mr. Andreliunas, and the oath you took earlier is still binding upon you.

THE WITNESS: Yes, your Honor.

DIRECT EXAMINATION

BY MR. BUTZEL:

Q Mr. Andreliunas, I would like to ask you a couple of questions about Defendants' Exhibit B in this case, which was introduced by you or through you last week.

Do you have a copy of that exhibit with you?

(Whereupon, the exhibit was handed to the witness.)

Q Mr. Andreliunas, could you indicate to me, first, what documents the Chief of Engineers Office had available to it when they made the recommendation which is attached to the end of Defendants' Exhibit B?

A The documents which were sent down as enclosures with our letter were available to the Chief of Engineers.

I'm not personally aware whether the Chief had other documents other than perhaps periodic reports from our

Office indicating what the status of the application was during the period of time that was under consideration.

Q Now let us then define precisely what you sent down. You sent down the letter which is Defendants' Exhibit B, is that correct?

A That's correct.

Q Then you sent down the Environmental Impact Statement prepared by the Navy, the Final Environmental Impact Statement?

A That is also correct.

THE COURT: Is that part of this same exhibit?

MR. BUTZEL: The Final Environmental Impact Statement, your Honor, is Exhibit 6 in this proceeding, the two volumes.

THE COURT: This was a letter that accompanied Exhibit 6.

MR. BUTZEL: This was the letter that covered everything, as I understand it, that was provided to the Chief of Engineers in connection with their recommendation or their conclusion that the permit be granted.

Q Now, I think you said the other day that the permit application was sent down?

A That's correct.

Q Do you have a copy of the permit application available?

A I'm not certain whether we have it with us, but it was part of the entire correspondence file which accompanied --

Q Well, what did the permit application contain, if you know?

A The permit application contained a letter from the Navy requesting a permit supported by the plans, and as part of the application the information that we requested from time to time.

Q As far as you are aware, did that permit application include any information on cumulative impacts in Long Island Sound?

THE COURT: What sort of impacts?

Q Cumulative impacts of spoil disposal in Long Island Sound.

A Not as such.

I'm certain you have your own construction of what "cumulative" is. The Navy did not address any particular correspondence along the lines of cumulative effects.

Q What else was included in the package that went down to the Chief of Engineers?

THE COURT: Went down to or from?

Q To the Chief of Engineers. What did the Chief of Engineers Office have before it?

MR. COHN: I think we should make clear that

we are talking about Waltham to Washington.

MR. BUTZEL: I'm sorry. Yes, that would clarify it.

This Exhibit B, your Honor, is a covering letter with extensive explanation by Colonel Mason, the Division Engineer for the New England Division of the Corps of Engineers. In connection with the granting of the Section 404 permit that was issued here, Colonel Mason sent this letter to the Chief of Engineers Office in Washington and he sent with it a certain amount of supporting data, which I am trying to define now.

In return the Chief of Engineers wrote back that the permit should be granted. This based in Washington, the decision made out of Washington, I believe pursuant to the Corps' regulations that require decisions in controversial cases to be made by the Chief of Engineers Office.

Q Is that correct?

A That is correct, yes sir.

MR. BUTZEL: And so I am simply trying to define what the Chief of Engineers Office had before them when they made the decision.

Q So far we have the exhibit itself, namely the letter itself, the Final Environmental Impact Statement, the permit

application. What beyond that?

A Copies of public notices, the hearing transcripts --

Q And those hearing transcripts are now found in Volume 2 of the Final Environmental Impact Statement, is that correct?

A They are.

Q Anything else?

A As I mentioned, all correspondence and memoranda that were in the permit file.

Q As far as you are aware, did any of that contain information on cumulative effects of dredging from either the Corps' project or other projects in Long Island Sound?

A That information, some of it I believe contained references to the problem of regulation of dumping grounds, which of course the entire problem of regulation of dumping grounds considers the cumulative effects of dumping.

Q Well, to what do you have reference?

We have been provided, I am told, with everything; all correspondence and the like.

A Yes, sir. The reference is to the numerous meetings that were held at various times to determine which dumping grounds should be specified.

I believe there is reference to a number of meetings between the Corps, the federal agencies and the three states involved relating to the establishment of regional dumping

grounds to replace the nineteen existing dumping grounds in Long Island Sound.

Q Well, what in particular among that, if anything, do you know, Sir, sought to evaluate impacts cumulatively, in conjunction with the New London Dumping Proposal?

A In a sense what we were trying to do was find a methodology for evaluating whether or not there is a cumulative effect.

Q There was no analysis, then, of the cumulative -- or attempted analysis of the cumulative effect in that?

A We didn't understand the effect on one dumping ground. We had a hard time trying to figure out what would happen in the entire Long Island Sound.

Q Then I'll try to limit this so we can shorten it. I'll ask you directly:

The Navy has acknowledged, based on its certain claims that Mr. Cohn has filed a memo on, that it did not take into account cumulative impacts here in preparing its Impact Statement.

Is there any documentation that you have reflecting in specific connection with this New London proposal the Corps consideration of cumulative impacts?

MR. COHN: Your Honor, I'm going to object to putting words in his mouth because I don't think our memo says that.

Maybe we could just ask him to rephrase the question.

MR. BUTLER: Sure. I would just ask that the first segment of that question be deleted.

I thought that was the thrust of your memo, but if I'm wrong I apologize.

A I think the best answer I can give you is that the Corps has been endeavoring for some time to determine a policy for assignment of dumping grounds which takes into consideration all environmental effects, including what you might describe as cumulative effects, as well as the necessities for carrying on required public works projects.

Q I think I understand you're talking about policy. I'm asking in connection with this New London proposal what evaluations, if any, were made so that the whole project was put in the context of cumulative impacts; specifically as related to New London?

A The considerations were made over a period of time in trying to construct some sort of a meaningful study program which involves related studies in practically every dumping ground that's in use in New England at this moment. We are trying to establish a base of knowledge here on dumping effects by studying a number of dumping grounds, including three in Long Island Sound, to try to put together some data which would lead us to a conclusion of whether or not there are

cumulative effects.

Q I understand the program. Let us take New London specifically.

Based on the exhibit, I believe it is, that's already been introduced, there is this current project going forward, 2.8 million cubic yards; there is a pending Corps proposal for an additional 1.- million cubic yards; there are two projects, one involving Electric Boat and the other the Coast Guard, each involving 300,000 cubic yards; there are --

THE COURT: Well, let's not build it up. Let's try and see if you can't make him understand what you are driving at more simply.

Is that possible?

MR. COHN: Mr. Butzel, I think you should refer the witness to the document because on Page 16 there is reference to various conclusions. I don't know if that's what you are looking for, but maybe that will speed us up.

Q You're welcome to look at Page 16. I want to know if you made any analysis.

Did you make any analysis of the cumulative effects in conjunction with the New London proposal?

MR. COHN: I think perhaps the witness would be assisted if he looked at the record rather than trying to recall.

If you could ask him to turn to page 16, maybe it would assist him. I don't know.

MR. BUTZEL: I'm certainly not foreclosing Mr. Andreliunas from --

BY THE COURT:

Q Well, I understood you to say before, Mr. Andreliunas, that you had a hard time to determine the effect which this one proposed project would have as an environmental impact in the Sound.

A That's correct, your Honor.

Q And it would be much more difficult to find out to what extent that impact was in addition to whatever other earlier impact there may have been from earlier dumpings?

A That is correct, your Honor.

We have given a great deal of thought to the matter and if that is consideration, certainly we gave it consideration. But if you're asking if we applied a certain body of knowledge to it and made an evaluation or analysis, I say we had very little to go on.

So that it's pretty hard to extend what you don't know about a small area to a larger area.

Q All right.

A That's my answer.

Q Let me ask you this: Were you aware or did you consider that whatever effect prior dumps had had, that this

new project would be added on top of that?

A Yes, we did, your Honor. We did consider and it was at our insistence that the Navy carried out the initial study on the New London Dump in 1973.

Q In other words, you weren't sure that this was just moving the possible pollutants from one spot to another without adding or without itself creating any additional hazard to environment?

A That's right.

Q But you thought it might?

A That's right, your Honor.

Q But so far as that goes, that's about as much of a judgment you could make about it is you know the problem might be there?

A That was the basis upon which we initiated all our studies. We recognized that we needed to make studies in order to find out. Otherwise, we wouldn't have started studies.

THE COURT: I don't know whether I'm getting at what you are trying to get at. I'm not trying to hurt or help anybody, but if this is what you want to find out --

MR. BUTZEL: I wanted to know, your Honor, in view of all of the projects, not only in the past two years while this Impact Statement was being put

together, but in view of all the projects projected, projects known, the Corps' own project in the Thames River, for example, what evaluations were made of those impacts, of those cumulative impacts, if any.

THE COURT: What cumulative impacts, of possible future projects?

MR. BUTZEL: Yes.

THE COURT: That might come about in the future? Where is this going to leave us if we have to dredge another river?

MR. BUTZEL: Some of which were known, many of which were known by the Corps' own projections which we have developed in Exhibit 15.

THE COURT: Okay.

Do you understand it now?

THE WITNESS: I understand it.

I think Mr. Butzel is saying what's going to happen if you dump the Corps' project project in the New London Dump Ground. We haven't reached that point yet of deciding that. Once we're through this project we're not sure whether the New London Dump Site would be continued to be used for other projects. I think those decisions need to be made.

Q (By Mr. Butzel) And you didn't attempt then to evaluate that in conjunction with the New London proposal, is

that correct?

A We addressed it in this statement here. We said there are other projects that are coming up.

MR. COHN: That's the point I'm trying tomake, your Honor; that it is in the record, at least cursorily mentioned on Page 16.

THE COURT: All right.

Q (By Mr. Butzel) Fine. If you want to tell me that it's cursorily mentioned on Page 16, to use your counsel's words, and that reflects your consideration, fine. All I'm trying to do is define the situation.

A If you're asking me did we think about it, we certainly did. I think the record --

Q I'm asking you did you evaluate the potential of the additional spoil?

A We evaluated it to the extent that we could.

Q And to what extent, is there any documentation to reflect that, sir, other than this Exhibit B?

A I believe that this covers it here.

MR. BUTZEL: Thank you.

If you'll bear with me one second, your Honor.

THE COURT: Catch me when I come back.

(Short recess.)

* * * * *